

# Manufacturers Record

Reg. U. S. Patent Office



SEPTEMBER 1934

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## TO REVIVE CONFIDENCE

*The President might say:*

"I will recommend the removal of Section '7A' from the Recovery Act.

"Fear of further inflation may be dismissed at once.

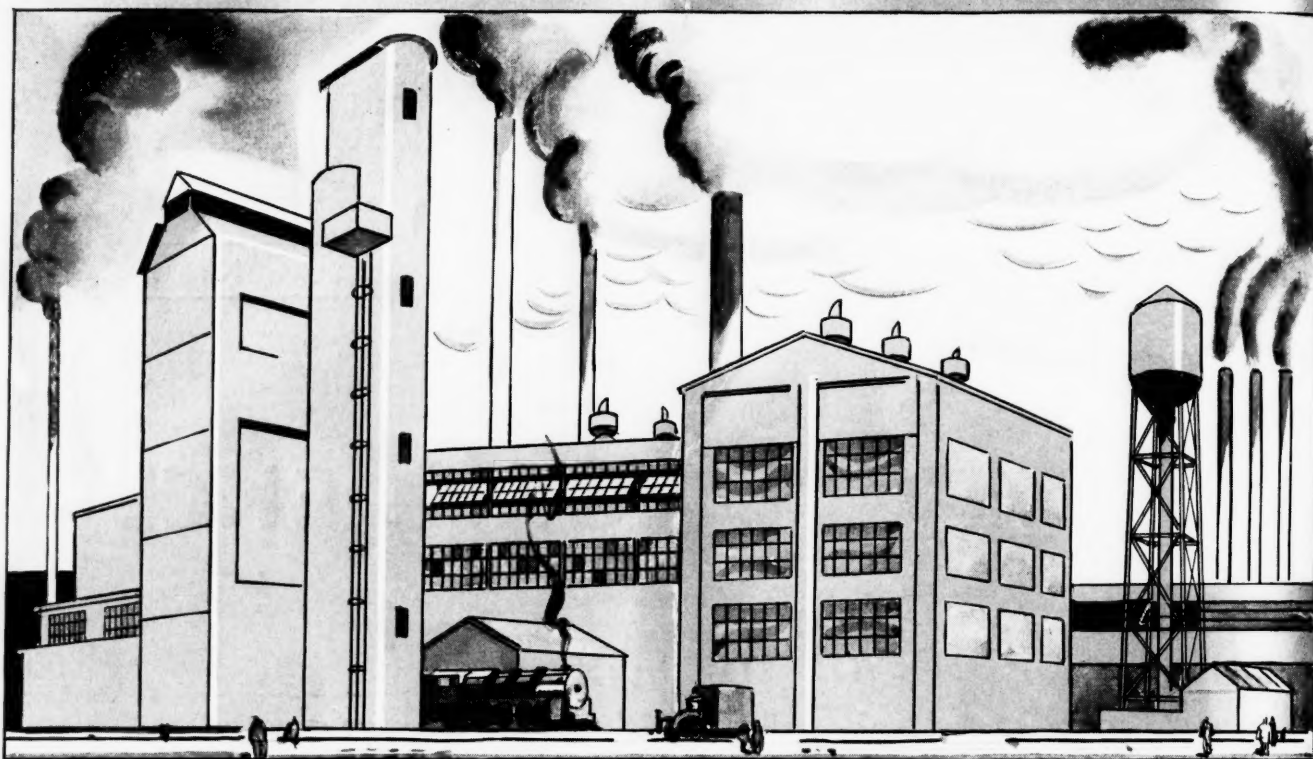
"Gold is the recognized basis of our currency. The value of the dollar will not be further depreciated.

"Expenses of Government will be reduced rapidly, both extraordinary expenses as well as operating expenses.

"Government competition will not be extended in any direction.

"Recovery through the encouragement of private industry will be my chief aim."

# THE COUNTRY'S GREATEST CORPORATIONS NEVER GUESS ABOUT PAINTS



## *They are large Quantity buyers of* **ALUMINUM PAINT**

BECAUSE TESTS AND ACTUAL EXPERIENCE HAVE PROVED ITS DURABILITY AND ECONOMY. Their purchasing agents, chemists, maintenance engineers must be sure before large expenditures can be approved. What these corporations have learned about Aluminum Paint is of value to any buyer of paint, large or small.

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REG. U. S.  
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paint with suitable, well-compounded vehicles, the millions of tiny flakes, "leaf"... overlap each other and actually form a continuous coat of metal protection... protection against weathering of wood and rusting of metal... protection against smoke and fume.

Of equal interest to these large buyers...Aluminum Paint costs no more, gallon for gallon, than other good paints.

**ALCOA ALBRON**  
PASTE AND POWDER FOR  
**ALUMINUM PAINT**



# LINK-BELT PROMAL

## *The Super-Service Cast* SPROCKET CHAIN



Cross section of Promal, the metal of advanced physical properties. Its merit is not a surface quality, but goes all the way through—the whole metal is PROMAL. The white areas represent soft metal. The black network structure indicates stronger, stiffer material, which acts as a reinforcement around the soft white portions, preventing their distortion under load, and so strengthening the material. Magnified 100 times.

PROMAL is an original Link-Belt development which has achieved a combination of high tensile strength and wear resistance never before equaled in cast chains. Over five years service in all industries under the most exacting conditions have proved its worth. PROMAL possesses in a high degree all the qualities desirable in cast sprocket chain: great toughness, great ultimate strength, high yield point, high resistance to abrasive wear and to corrosion.

### A Typical Experience with PROMAL

The Engineer of one of the large chemical companies, with numerous plants, issued general instructions after having equipped several elevators with C-111 Promal Chain, that thereafter Promal was to be substituted on future requisitions for malleable chain. It is this well-known Engineer's opinion that the added length of service is worth the small additional cost of the chain. You can now obtain PROMAL in all sizes of standard cast chains. PROMAL will operate on the same wheels as malleable chains of same number and dimensions.

### LINK-BELT COMPANY

5101

INDIANAPOLIS PHILADELPHIA CHICAGO SAN FRANCISCO TORONTO  
ATLANTA BALTIMORE *Offices in Principal Cities* DALLAS NEW ORLEANS



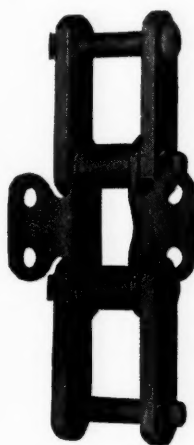
"1100" Class roller chain has sidebars cast with projections at one end which telescope, forming rigid barrel over which roller turns freely.



"MR" Class roller chain has rollers turning on barrels formed by abutting instead of telescoping end bar projections.



Original Ewart Detachable Link-Belt is the standard for conveyors, elevators and drives of moderate capacities and speeds.



"C" Class chain is a combination of cast block links (malleable, Promal or cast steel) and outside bar-steel sidebars, connected by steel pins or rivets.



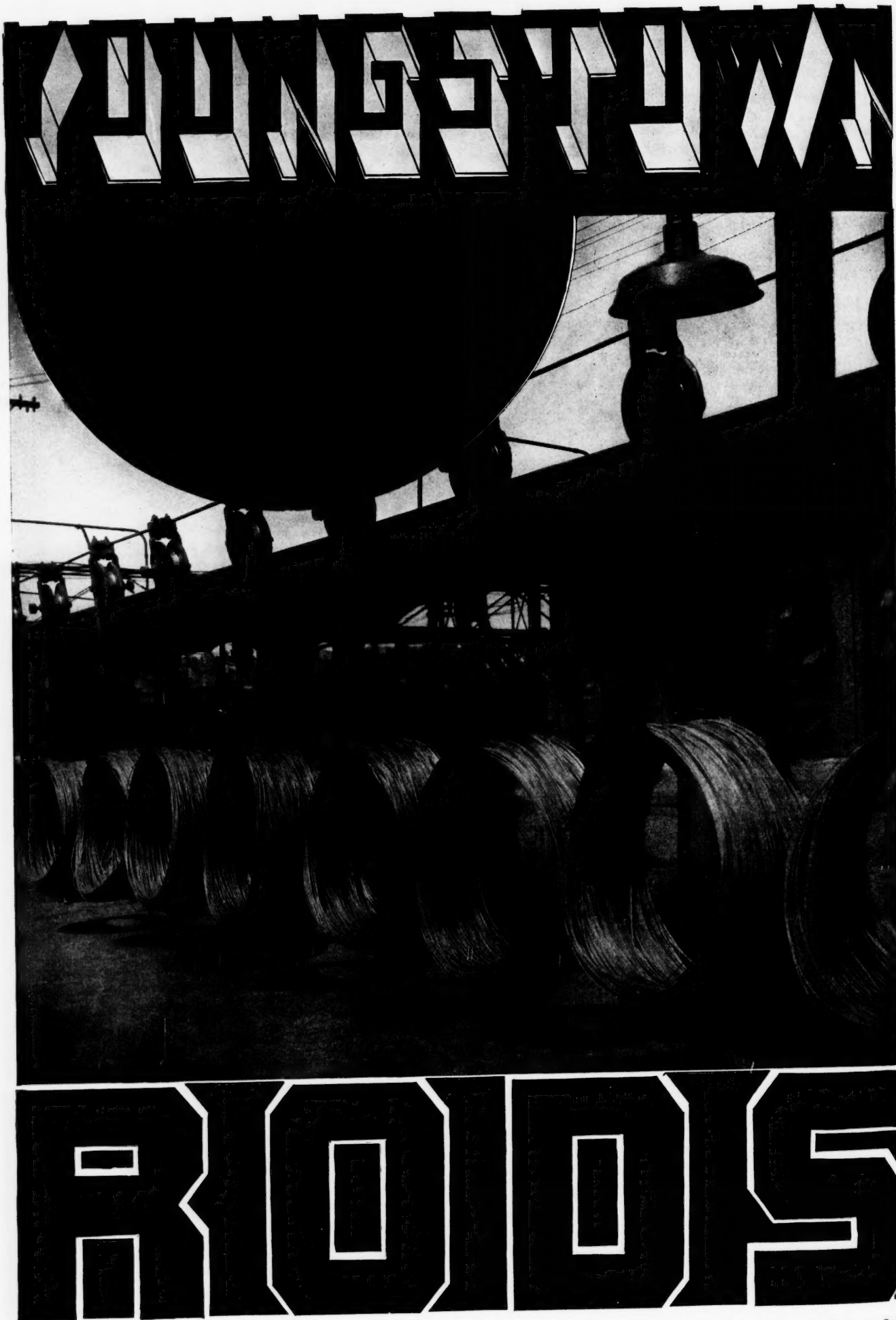
"SS" Class steel chain links are made with offset or straight side bars; with or without rollers, to meet conditions requiring extra strength, ruggedness and durability.



Rivetless chain with hinged drop finger attachment. A drop forged steel chain for heavy duty conveyor and elevator service.

**Some Typical LINK-BELT Chains made in PROMAL, Malleable and Steel**

SEPTEMBER NINETEEN THIRTY-FOUR



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**SEPTEMBER  
1934**

Volume CIII No. 9

## MANUFACTURERS RECORD

Devoted to the Upbuilding of the  
Nation Through the Development  
of the South and Southwest as the  
Nation's Greatest Material Asset

*Published Monthly*

by the

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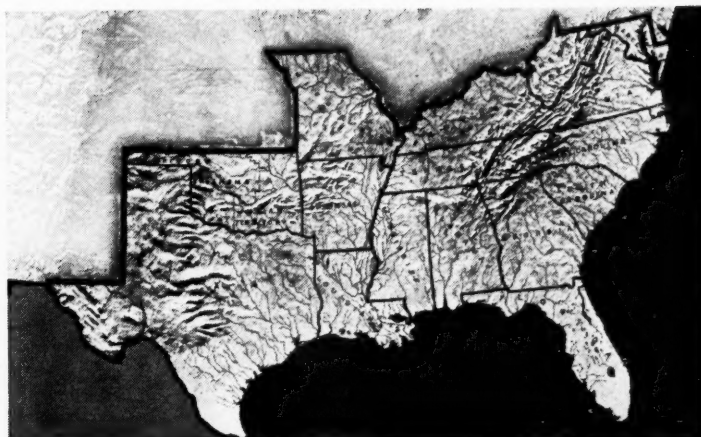
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**PUBLISHERS DAILY CONSTRUCTION BULLETIN AND  
BLUE BOOK OF SOUTHERN PROGRESS**



Member  
A.B.C.

SEPTEMBER NINETEEN THIRTY-FOUR



The South has 31.8 Per Cent of the Land Area and 33.4 Per Cent of the  
Population of the United States

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THESE three crystallizers  
—CLOSED, semi-closed  
AND OPEN-TOP types—are  
EXAMPLES of the many  
CLASSES of equipment  
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C-E organization. There  
PRESSURE VESSELS have been  
BUILT for more than  
FIFTY years, serving  
INDUSTRY in many fields,  
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EXPERIENCE, assure the  
EXCELLENCE of fabricated  
PLATE WORK built in these  
SHOPS . . . facilities such as  
BOILER shops, welding shops,  
FOUNDRY, pattern shops,  
MACHINE shops; plate  
BENDING PRESS capable of  
SHAPING plates cold up to  
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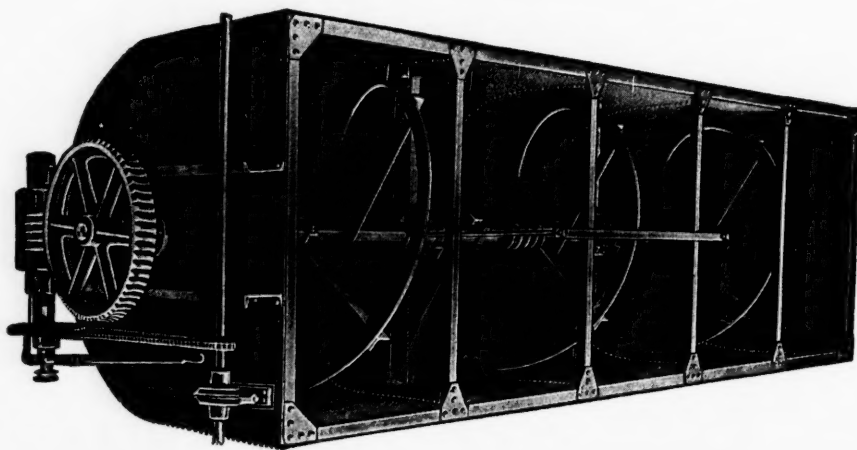
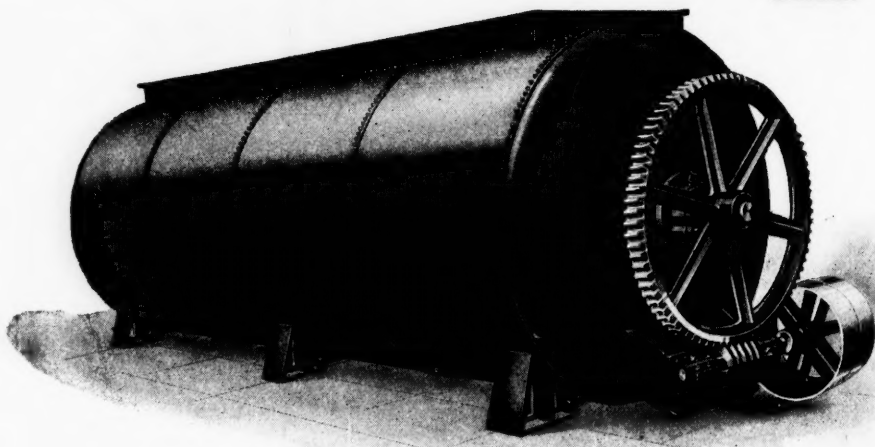
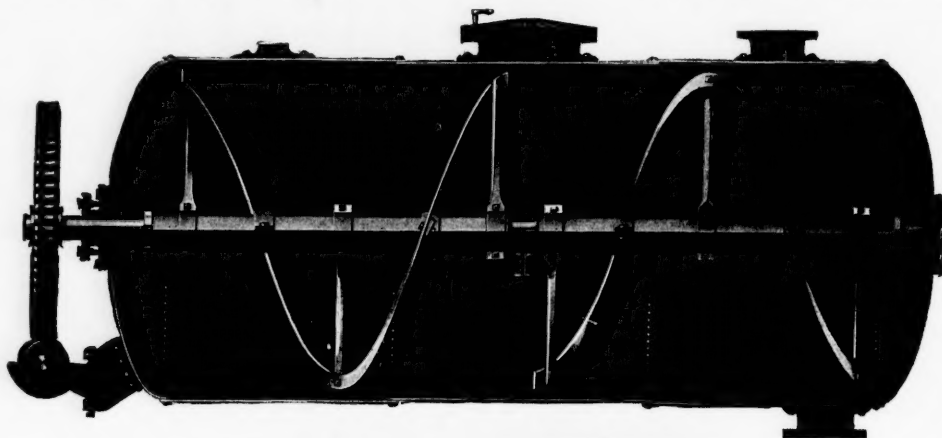
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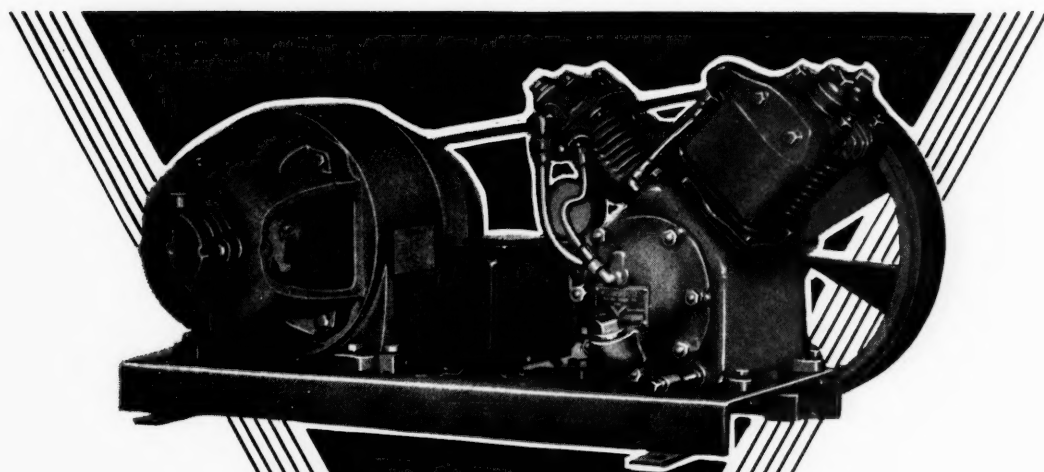
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## COMBUSTION ENGINEERING COMPANY • INC.

200 MADISON AVENUE, NEW YORK

Canadian Associates, Combustion Engineering Corporation, Ltd., Montreal.

MANUFACTURERS RECORD FOR



# ANNOUNCING

## *A New Line of Air Compressors*

The Type "Y" WESTINGHOUSE Air Compressor is designed to meet the need for an efficient, reliable, and economical source of compressed air for small shops, garages, road machinery, etc. Its outstanding characteristics are:

An efficient means of air cooling, permitting continuous operation at a very low unit power cost.

A controlled lubricating system (combined pressure and splash), insuring a reliable supply of oil to every vital part.

Ball-bearings on the motor and crank shaft, reducing frictional heat and losses to a minimum.

Rugged construction throughout, assuring long trouble-free service.

A positive unloading feature interlocked with lubricating system, insuring protection for the compressor as it can deliver no air if oil supply is dangerously low.

Write for full description and prices.

This compressor is manufactured in sizes ranging from 4 to 31 cu. ft. displacement and in various types for any requirement: Tank mounting, with legs for fixed installation, or casters for portable use; bed plate mounting for floor or sill installations; bare compressor with fly wheel for direct drive by any form of power take-off. . . Two-stage compression for pressures from 100 to 200 lbs., single stage for pressures below 100 lbs.

**WESTINGHOUSE  
AIR BRAKE CO.**



GENERAL OFFICE  
and WORKS



■ ■ WILMERDING, PA. ■ ■

SEPTEMBER NINETEEN THIRTY-FOUR

# ECONOMY

## ON ANY JOB DEPENDS ON THESE FACTORS..

1. *Design* . . . based on years of engineering experience and proved in service.
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3. *Applicability* . . . skill in the job of selecting and installing equipment to meet squarely any handling problem you may have.
4. *Low Upkeep* . . . economy of operation and minimum repair cost.

Jeffrey Products . . . just a few are illustrated here . . . have a reputation for being well-made, for giving long service and for economical operation.

Jeffrey Engineers have had decades of experience in determining the right unit for your need. Let them assist you to economical, satisfactory, low-maintenance material handling.

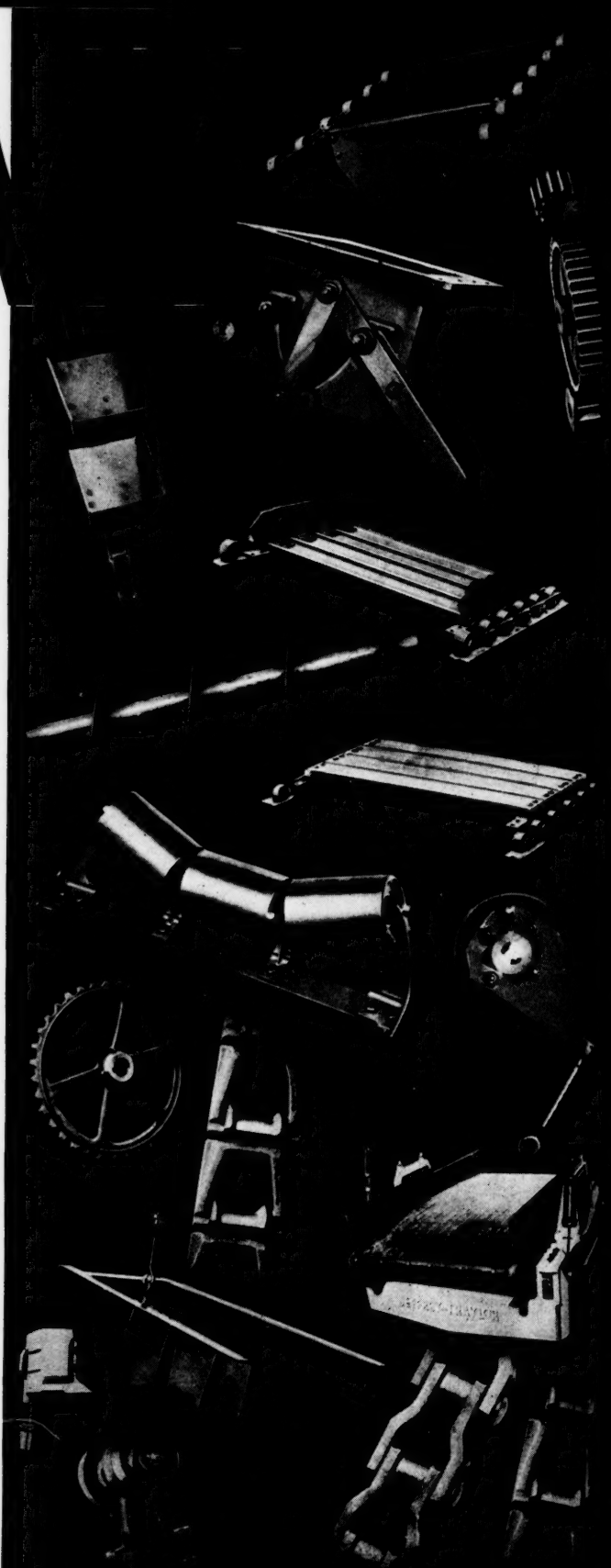
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Jeffrey Manufacturing Company, Ltd., of Canada  
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# HIGH EFFICIENCY FROM REFRIGERATING MACHINES AT ROYAL PALM ICE CO.

*Gulf lubricants keep system clean and give more efficient heat transfer*

**P**LANTS in all branches of the food industry which operate refrigerating machinery are finding that lubrication has a tremendous influence on the efficiency of their equipment.

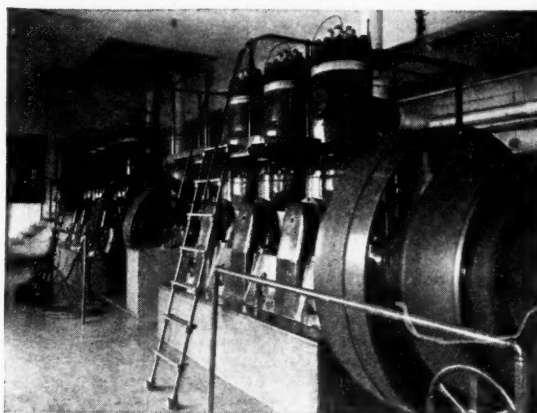
The Royal Palm Ice Co. of Miami, Fla., is one of a long list of plants which are enjoying more efficient and economical operation through the use of Gulf lubricants and engineering service.

Here are 7 important operating economies which accompany the use of Gulf quality oils for refrigerating machinery: more efficient heat transfer, minimum oil deposits, high back pressure, lower power bills, a cleaner system, less wear and leakage, and fewer shutdowns.

May we suggest that you permit a Gulf engineer to survey your equipment and discuss with you the possibilities of effecting further economies and improvements in the operation of your machinery through better lubrication?



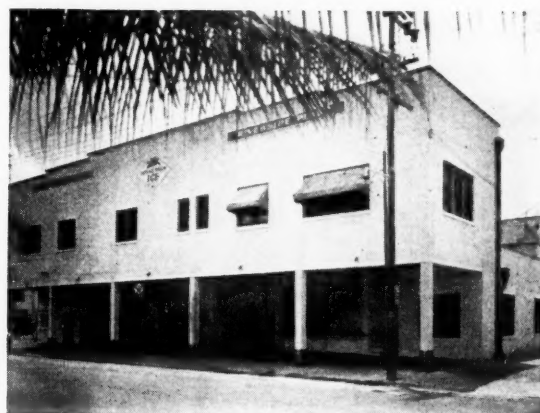
This interior view of the Royal Palm Ice Company's plant at Miami, Fla., shows the refrigerating compressors at work. Gulf lubricants keep them operating at top-notch efficiency.



These Diesel engines supply the power to operate the refrigerating machinery at the Royal Palm plant. Gulf Diesel lubricants are used.



Exterior view of the Coconut Grove plant of Royal Palm Ice Co., one of the associated companies of the General Public Utilities Company.



View of the Riverside Plant of Royal Palm Ice Company at Miami, Fla., where Gulf lubricants play an important part in the efficient operation of their refrigerating machinery.

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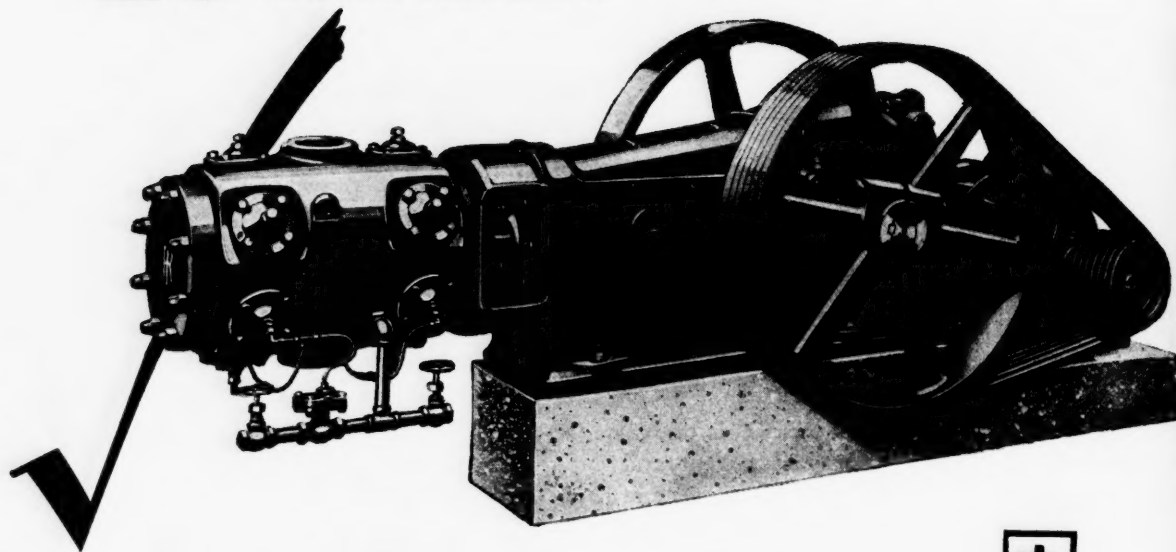


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GULF REFINING COMPANY M. R. 9  
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Please send me, without obligation, the booklet "Gulf's 7-Point Plan for Industrial Lubrication."

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Title.....  
Company.....  
Address.....

# Class "ES" COMPRESSOR

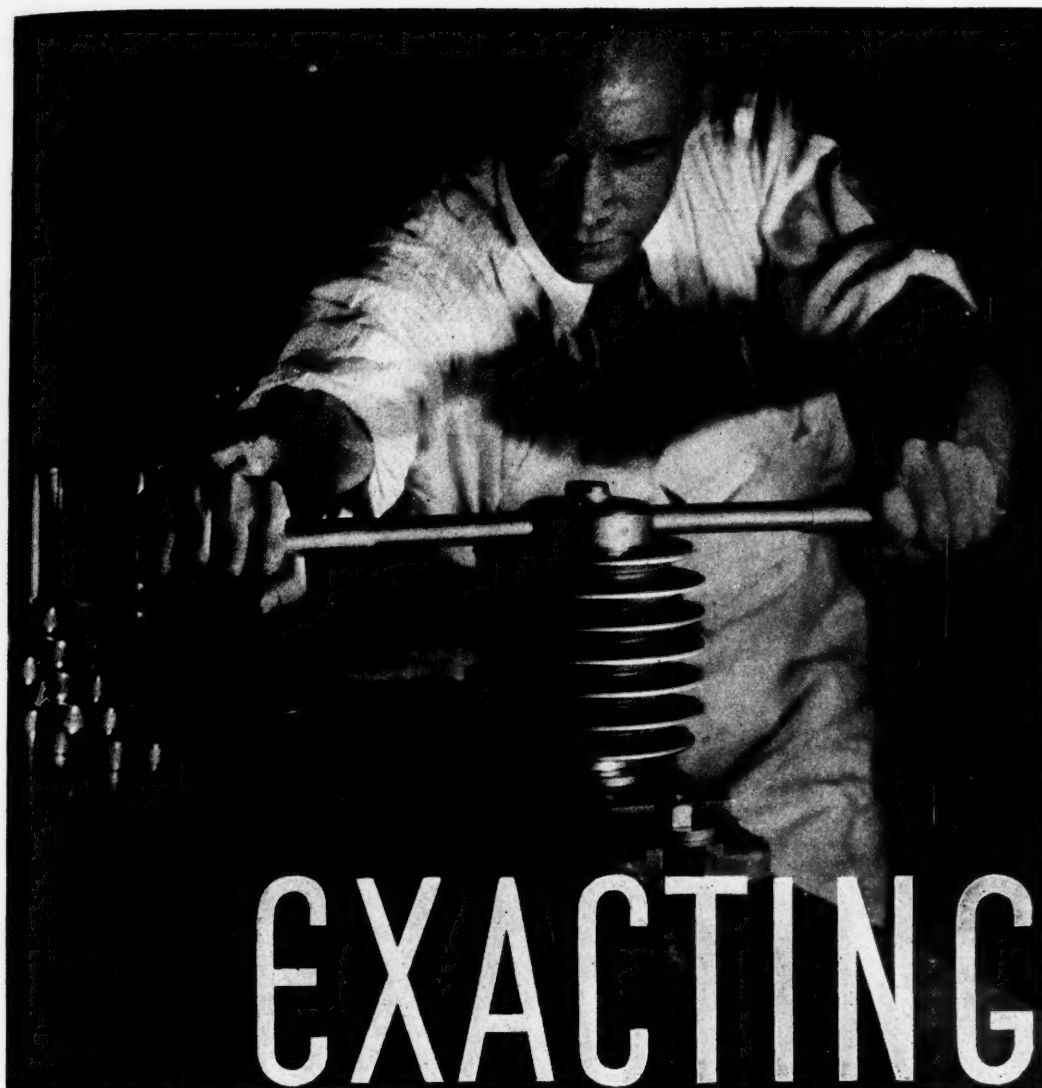


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| ✓ The most efficient single-stage compressor on the market today   | ✓ Built for heavy-duty, full-load, continuous service             |
| ✓ Low discharge temperatures                                       | ✓ Fool-proof, efficient regulation                                |
| ✓ I-R stainless steel valves resist corrosion, maintain efficiency | ✓ Double-row Timken for each main bearing                         |
| ✓ Ideal for handling poisonous or inflammable gases                | ✓ Pressures 5 to 150 lbs.<br>Vacuums up to 29 $\frac{1}{2}$ " hg. |
| ✓ Discharge air or gas is practically oil free                     | ✓ Texrope, short-belt, or direct-connected drives                 |

# Ingersoll-Rand<sup>56-1</sup>

11 BROADWAY, NEW YORK CITY



# EXACTING

**I**T is when the going is toughest that Texrope Multiple V-belt Drives really prove how good they are, and how completely they measure up to every exacting test.

In the mining and rock-crushing industries, where power drives are subjected to severest strains, Texrope Drives are carrying the heaviest loads, and without a murmur.

In textile plants, where oil and dirt are frowned upon, Texrope Drives are as clean as a Dutch kitchen.

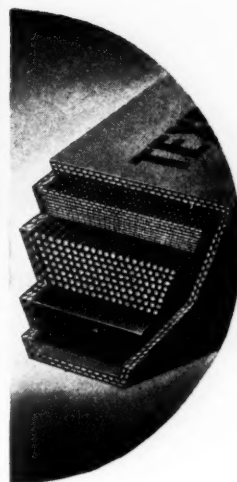
In laundries, paper mills, and refrigerating plants, where moisture is a handicap, Texrope Drives are giving steady and flawless service.

In hospitals, schools, courts, and office-buildings, where the least noise is tabooed, Texrope Drives are running so quietly you would not know they are moving.

Texrope Multiple V-belt Drives neither slip nor backlash, and so do away with all jerks and jars. Because there is no wear on sheaves, and practically none on the Texropes, replacements are infrequent. Their constant speed and low maintenance cost are bringing satisfaction to every user.

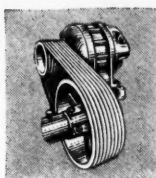
ALLIS-CHALMERS MFG. CO.

MILWAUKEE, WIS.



# TEXROPE DRIVES

ORIGINATED BY



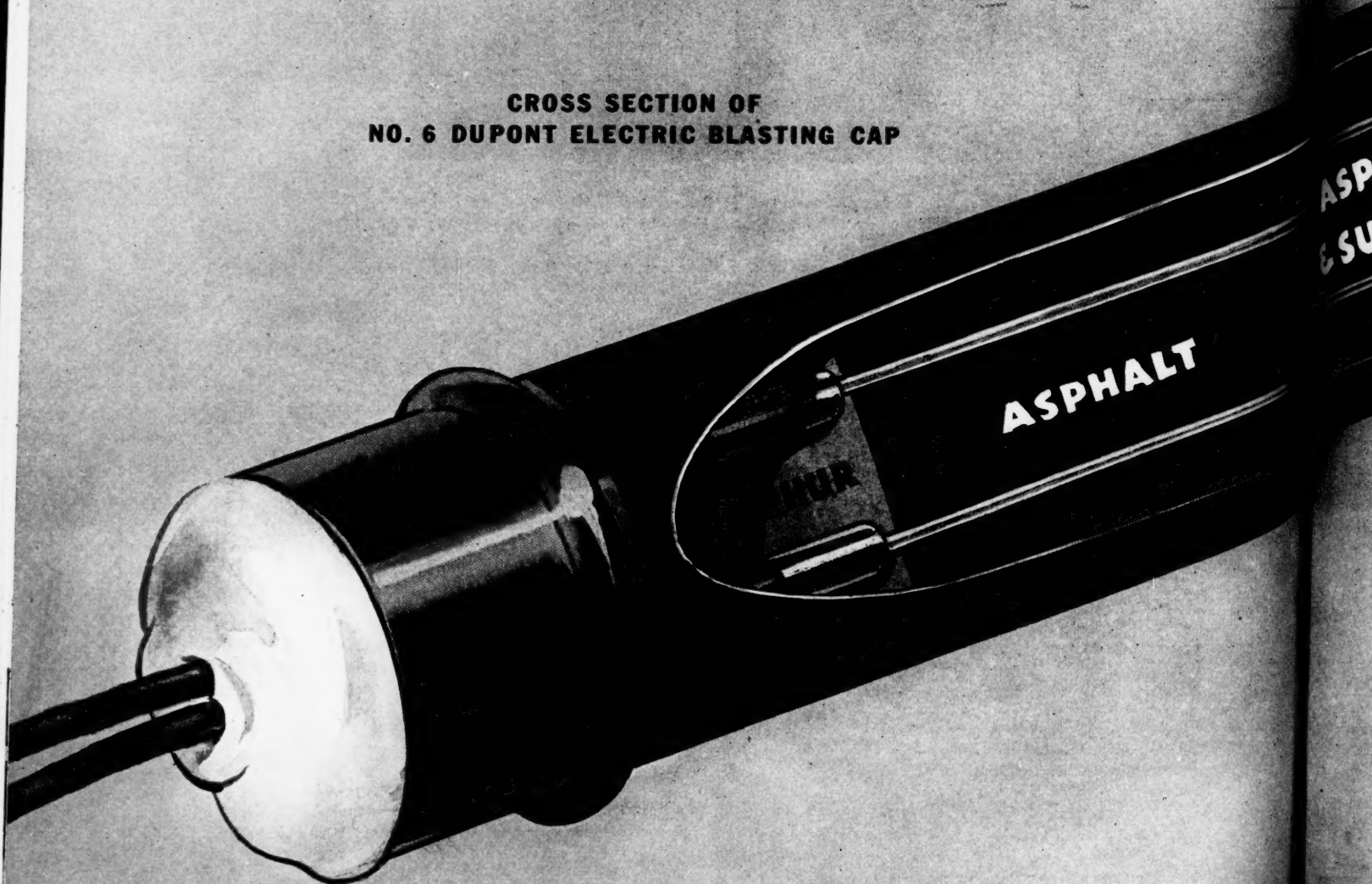
ALLIS-CHALMERS

SEPTEMBER NINETEEN THIRTY-FOUR

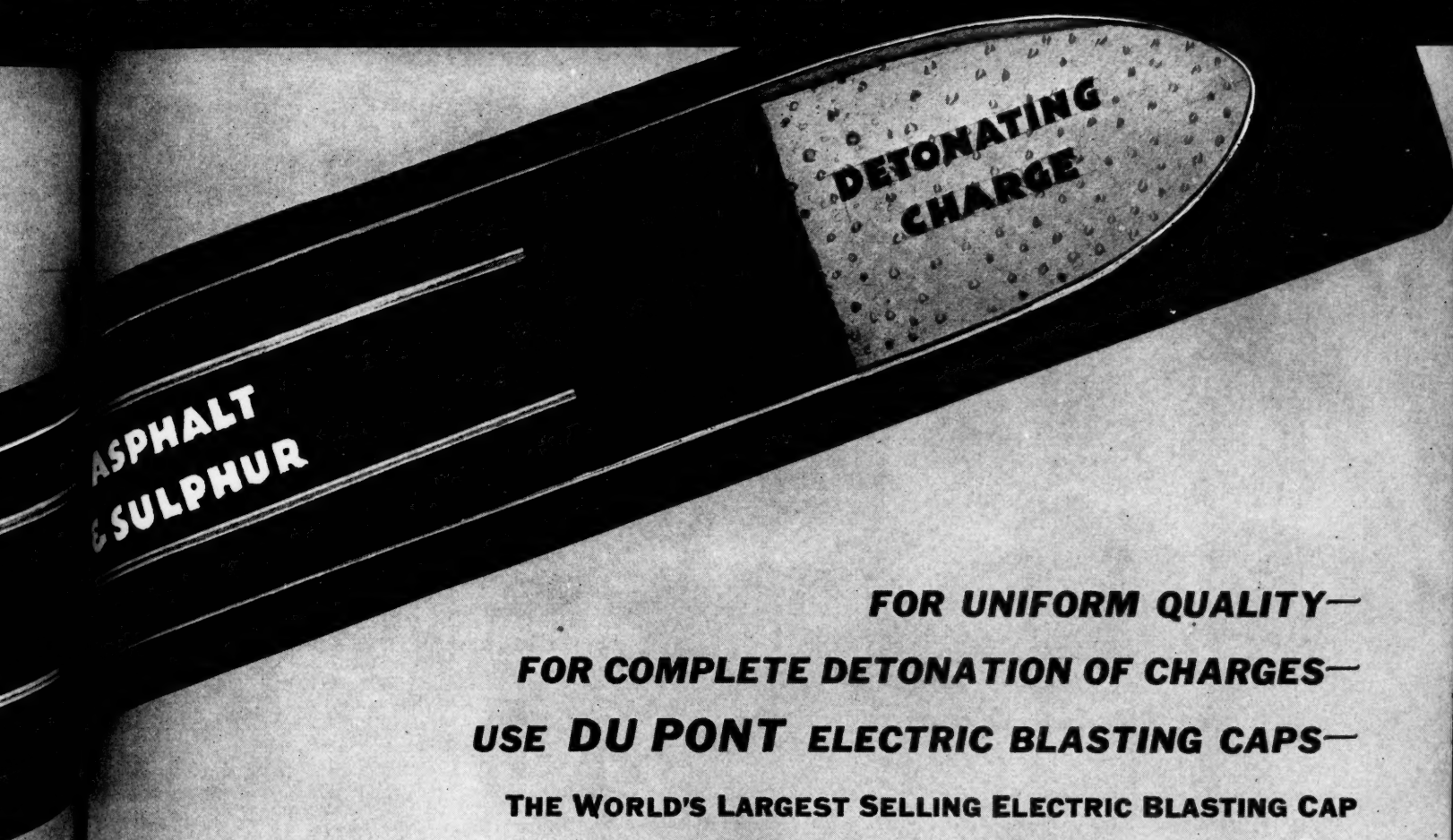


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**ELECTRIC BLASTING CAPS**  
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# REX CHAIN

**FOR EVERY DRIVE & CONVEYOR**

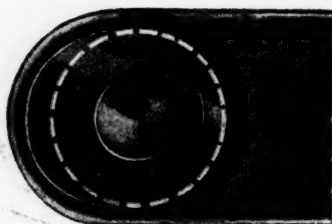
## Rex Z-METAL

Where there's excess wear Rex Z-Metal Chain stops it . . . .

Where there's pounding Rex Z-Metal Chain takes it . . . . .

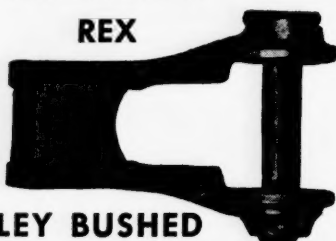
Where there's corrosion Rex Z-Metal Chain resists it . . .

**The Greatest Chain Ever Cast**



### REX DUROBAR

The added metal on the barrel added greatly to its life—now Rex Z-Metal adds a great deal more to the longer life of Rex Durobar on heavy duty elevators.

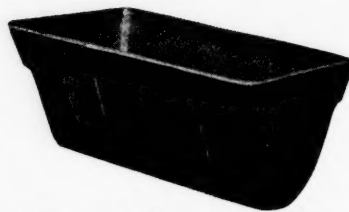


### REX LEY BUSHED

With hardened or alloy steel bushings. Rex Z-Metal also adds greatly to the working life of this long-wearing chain on heavy duty elevators.

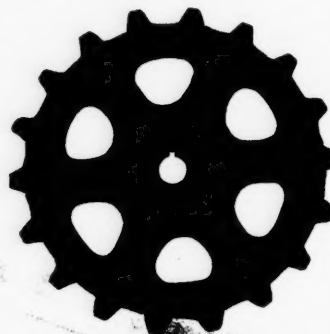
**Send for the Folder "REX Z-METAL CHAINS"**

## And the Greatest Wear-Resisting Combination



### REX Z-METAL BUCKETS

Rex Z-Metal Buckets, to go on these chains, will also greatly outlast malleable buckets, giving an unbeatable combination for the severe service in handling rock, sand and gravel, cement.



### Running on Rex Alloy Temperim Sprockets

To meet the greater hardness and wearing qualities of Rex Z-Metal Chain—a new Rex Alloy Temperim Sprocket is ready, adding again to the long life that this long-lasting, wear-resisting combination will give on heavy duty service.

### CHAIN BELT COMPANY

1626 W. Bruce St. MILWAUKEE, WIS.

# CHAIN BELT COMPANY

## CHAIN & BELT CONVEYING



# • Manufacturers Record •

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## WHAT CAN BE DONE?

**BECAUSE** of the mix-up at Washington business men of the country view the future with grave misgivings.

We are not emerging from the slump in a way to afford encouragement, and the money outlay in comparison with results achieved is far too great. Unfortunately, indications point to more and more government spending and more and more government competition with private interests.

The leaning to the Left by government destroys confidence on the part of men taught in a different school, who have watched America develop and helped to make it the greatest country in the world.

There are too many fallacious theories which cannot work and never will.

For a long time most of the stimulation has come from government spending, which must stop sooner or later.

Buying of durable goods lags, although there is increasing need for basic products and we must look to these lines for the reemployment of a large part of our idle labor.

Unfortunately, in none of the President's utterances does there appear the looked for light which business needs to see through the colossal changes forced upon it. It does not know what is ahead.

It is not necessary to recite here what these changes have involved, including the attitude adopted toward labor, which resulted in its attempt to dominate and has led to continuing strikes throughout the country, all the way through the list which takes in the devaluation of the dollar, the control of crops, the vagaries of the NRA and government competition that is discouraging to individual ventures and investments.

What then is needed to create a better outlook; to turn lethargy to activity?

*Suppose the President should say:*

"I will recommend the removal of Section '7A' from the Recovery Act.

"Fear of further inflation may be dismissed at once.

"Gold is the recognized basis of our currency. The value of the dollar will not be further depreciated.

"Expenses of Government will be reduced rapidly, both extraordinary expenses as well as operating expenses.

"Government competition will not be extended in any direction.

"Recovery through the encouragement of private industry will be my chief aim."

This would mean the abandonment of new and greater hydro-electric projects that will eventually call for billions and perhaps prove a death blow to the coal industry of America. Although it might shock thousands of useless jobholders and strikers and those who have been eating from the public trough, it would cause the people who have been used to doing things on their own account in this country to feel that life has taken on a new color; that there is brightness ahead.

With the great unfilled demand for equipment and materials and buildings of all kinds that will call for activity for years to come, that will create employment and enable debtors to pay their debts, men of action would be inspired to set about performance. These are the ones to whom the country must look for its recovery.

Over night there would be a different outlook. Business, which has been pushed aside and treated as a stepchild, suspected constantly of criminal practices, would be given new hope. The courage and ability which have made possible the comforts that America enjoys, that have promoted science and provided our unmatched educational facilities, would be stimulated to renewed effort.

## REASONABLE OPTIMISM

**T**HE MANUFACTURERS RECORD was asked recently to state some reasons substantiating the belief of the inquirer "that our country seems to have turned the corner and that a reasonably conservative optimism is justified."

In so far as the South is concerned, this section has made more rapid recovery than other parts of the country, and it is in better condition than any other section. Crop prices have advanced materially and farmers, as a whole, have a better outlook than for several years past. With cotton selling around 14 cents a pound, the government placing a loan value of 12 cents a pound to farmers, and tobacco bringing a better price than for some time, there are indications of continued improvement in trade in the Southern States. Loans are being liquidated and collections are better than for any time in the past three years. These are the encouraging factors, for without a reasonably prosperous agriculture we cannot have sound general prosperity in this country.

While general business is below the volume of pre-depression days, the dollar value of wholesale trade being about 56 per cent under that of 1929, due in part to prevailing lower prices, it is above the low point of 1932 and 1933.

Car loadings have improved and are holding fairly steady despite the absence of any volume of heavy construction material shipments.

Electric power output is considerably above 1932 and 1933 levels with practically every week of 1934 showing some advance over the corresponding week of last year.

A more active market for real estate in 70 per cent of the 268 cities of the country surveyed by the National Association of Real Estate Boards is reported, with a decrease in the number of residential vacancies. Of total dwelling units in 19 cities of the South, only 6 per cent were vacant, while 9.6 per cent of the dwelling units reported "doubled-up" families, indicating that a further demand for residences will bring about a housing shortage.

Reflecting improvement in agriculture and trade there has been substantial increase in construction activity throughout the South. Public works have contributed in recent months, but an increasing amount of money invested in new industrial enterprises and improvement programs is a matter of record.

During the past eight months, contracts have been awarded for more than \$50,000,000 of new industrial plants, additions and modernization work in the Southern States. The fact that several of the nation's greatest industrial concerns have established extensive plants in the South in the past 18 months and that other interests, local and outside, have opened branch offices and distribution warehouses, is proof of their faith in the South and in the prospects and future of the nation.

Another encouraging indication of the South's progress out of the depression has been the increasing number of new business charters issued. They have been considerably in excess of the number of dissolu-

tions. New incorporations since the first of the year in the State of Louisiana, for instance, are reported to set a record for any similar six-months period. Mississippi shows a substantial increase in new charters granted and North Carolina reported an \$8,000,000 increase in business permit capitalization for the first six months of this year.

Last winter Florida experienced the best winter season in several years and this summer the resorts along the Coast, the Carolinas and northward have been filled with tourists.

These are heartening facts on which to base faith in progress in the South and in the United States.

We have the raw materials, plant facilities and skill. We have the initiative and the determination to carry forward the work of rebuilding business if those in Government authority will not depart too radically from economic policies, principles and practices that have made us a leader among the nations of the world.

No evaluation of the nation's condition and prospects, however, can possibly overlook influences that are breeding uncertainty and are harmful in their effect upon private business which wants to push forward.

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## TEXAS CENTENNIAL

**N**OT to be outdone by the many celebrations of birthdays of other States and the phenomenal success of Chicago's Century of Progress Exposition, Texas is laying State-wide plans to fittingly observe in 1936 the 100th anniversary of its independence.

"Will the Texas Centennial rival the World's fair?" is the question asked by Dade Miller in *The Texas Weekly*. "In the first place, it is impossible to prophecy how successfully Texas will advertise its Centennial. The publicity committee of the Centennial Commission is doing valiant work in advertising the Centennial to Texas, but the task yet to come, that of advertising the Centennial outside the State will determine the success of the project as an international exposition.

"The great advantage possessed by the Centennial is that, while depicting the progress of the past, it opens the door to a future of munificent promise."

Knowing the spirit of Texas, its progressive, virile citizenship and its accomplishments since its courageous determination to free itself from Mexican rule 100 years ago, the MANUFACTURERS RECORD believes that it will measure up to the task of adequately commemorating a historical act that has helped to shape the destiny of the United States. Texas brought into the Union strength and potential wealth that is only beginning to be appreciated. It is fitting that in the 100th year of its youth, as the age of States is reckoned, that it should invite its sister States to participate in its celebration.

## THE PROFIT MOTIVE

**SECRETARY** Roper in a radio address declared that business improvement is better than business sentiment and "private enterprise is getting back upon its own feet and more and more is exerting its initiative and is able to relieve the Federal Government of responsibilities which under normal conditions belong to business." He referred to corporations resuming dividends from recent profits and the fact that the RFC had received payment of 42 per cent of the loans made to business.

He gave the opinion that the Government and the masses of the people did not like "unthinking" statements to the effect that the profit motive in American life had been abolished.

Business will be glad to know that previous allusions by some of the professors to profits as something unworthy, are not in accord with the opinion of Government, for which Mr. Roper is supposed to speak. However, there is no doubt of the fact that the thought of discarding profits as an incentive came first from Government advisers, and the country is still in doubt about the opinion of the one in authority above Mr. Roper who is responsible for the New Deal and all its ramifications. It has been recognized always by industry that without profit there can be little increase in employment and no way to meet the tax burden that is growing steadily. Competitive movements of Government, which tend to destroy the profit of individual business, have had a frightening effect because their result is to place an unbearable burden upon private endeavor.

It is necessary to go beyond a mere declaration that the profit motive is to be encouraged. If industry is to have adequate reassurance, it must know that a great many of the illusory schemes that have been tried will be abandoned. It must know that it is the sense of the Administration, from the President down, that the only possible way for this country to revive is by encouraging industry in every way; that otherwise we are getting deeper and deeper into a mess from which it will be increasingly difficult to find a way out.

It will take a great deal of profit to pay the taxes that will be the inevitable result of the New Deal's cost, cost that is being increased rapidly by the various moves Government is making with no sign of their lessening. On the contrary we have been assured that the cost will grow. How could it be paid without profit?

Mr. Richberg's report of what the New Deal has done shows only one side of the picture. No account is taken of the stupendous cost. Nor are such grave questions discussed as labor unrest evidenced by spreading strikes, the frequent changes in NRA policy that leaves business uncertain, and the encouragement given inflationists by changes in monetary policy. Of the 4,120,000 increase in employment which he reports, three-fourths were employed directly by Government or on public work. The proportion of the increase by private industry was small in comparison.

What will be the cost (not only in money) of Gov-

ernment price fixing, Government regulation of business, Government control of crops, and Government domination of almost every form of activity? These things make doubtful any lasting benefits to be gotten from the New Deal and very doubtful indeed whether profits will be attained by industry generally, even if the "motive" is now admitted as allowable.

## CHEMICAL EXPANSION

**T**HE South offers every important raw material for the manufacture of chemicals. From its mineral and forest resources it can supply domestic requirements and a surplus for export. These facts have been known for some years but until recently there has been comparatively little diversified chemical development in the South although it has long been the dominant fertilizer manufacturing region of the country.

Within the past year and a half four great chemical plants, representing an aggregate investment of approximately \$25,000,000, have been established in the South by concerns doing a nation-wide business. The reasons for the location of these plants in the South and why the chemical industry as a whole is looking Southward are given elsewhere in this issue by Williams Haynes, publisher of *Chemical Industries*. He points out that this notable expansion in such times as these and in the South is most significant. The development includes new products and new processes as well as greatly increasing the tonnage of standard industrial chemicals most widely used.

Pulp and paper, paint and varnish, soap, ceramics, petroleum and gas by-products, and diversified electro-metallurgical industries offer the greatest opportunity for development in the South.

Important primary factors in the South's advantages for chemical manufacturing are favorable climate, the wider utilization of waterways, available cheap power, and of course abundant, cheap suitable raw materials.

Heretofore, the manufacturing development of the South has been based principally on mechanical operations such as lumbering, textile weaving and other fabricating industries. But scientific research has led to the rapid expansion of chemical operations in many industries and the use of chemicals in some processes of manufacture in practically every industry. Therefore, in diversifying and rounding out its manufacturing it has been only a question of time when the South would command the attention of chemical interests. Recent events have proven the soundness of the predictions made in years past that the South was destined to become the center of the chemical industry of the United States. It has made giant strides toward this goal in recent months. Further expansion is certain as these new plants naturally will draw to the South other industries for the utilization of the primary chemicals produced, and available by-products offer the base for the creation of still other plants, thus adding to the wealth of the South and the nation.



# WAGE DIFFERENTIAL ESSENTIAL TO PROGRESS OF SOUTH

By  
**H. C. Berckes**  
Secretary-Manager,  
Southern Pine Association

**C**ERTAIN economic factors upon which the great majority of Southern industries have been established and are operated always have been recognized as demanding consideration, even by competitive producers in other sections and by economists and leaders in the labor movement. Because of these factors the South always has been conceded a wage differential as compared with prevailing rates in other regions. But in recent months there has developed agitation for removal of this long warranted difference in wage rates.

Maintenance of an equitable wage differential in favor of the South's lumber industry is absolutely essential for the continued progress of the industry. Justification of lower wage scales in the Southern lumber industry is readily apparent from a mere recitation of the facts without added argument.

One of the most important objects of the National Recovery Act was to secure fair and equitable wages and hours of labor throughout industry, and these provisions occupy a prominent place in every Code, particularly in the Lumber Code. No region recognized more fully than the South the necessity of forever eliminating the low wages and long hours that prevailed during the depression. Leaders in the Southern lumber industry were active and sincere in their efforts to bring an end to this situation.

Prior to submission of the Lumber Code to the Administration, the various divisions of the industry reconciled, in what can be characterized the greatest cooperative movement within competing groups of the industry, hour and wage differentials between regions. In the negotiations covering this vital matter Southern lumber representatives, through presentation of plain facts, conclusively convinced members of the lumber industry in other regions and the Administration as well, of the justice and necessity of maintaining a proper wage differential in favor of the South. At

the hearing on July 20, 1933, while negotiations for the Lumber Code were in progress, representatives of the South's lumber industry presented a brief to the Administration outlining the facts bearing on this subject. This statement, in fact, was a brief not only for lumber, but also could serve for all industry in the South. It set forth conditions of which many interested in the formulation of codes were not aware.

Among other things the Southern lumbermen brought out the fact that because of climatic and other natural conditions in the South operations of necessity must be more leisurely than in other sections of the country and much less productive than in those regions where the industry is highly mechanized. Lumber operations in the South can be conducted the year around. There is greater regularity of employment than in those sections where severe winters compel seasonal operations. Economic units suitable to Southern timber operations require a larger number of men relatively for a given amount of work than is the case in other regions.

Fixation of maximum hours per week for employees in the Southern lumber industry, practically fixes the limitation upon the hours the plants may operate, for the reason that few sawmill plants in the South are equipped to operate double shift. This is particularly true of the smaller mills which constitute by far the greater number of mills throughout the South and in the aggregate produce the greater part of the lumber. Nearly all the larger Southern sawmills are located in rural communities which are supported entirely by the local mill operations. These communities have been created by the mills; the housing, and public conveniences and facilities, are in nearly all instances provided by the mills. The communities have been built up to take care of the normal production of such mills under a single shift operation. To undertake double shift operations would require not only substantial plant additions, but also the construction of additional dwellings and other facilities to provide for increased population.

Statistics and pertinent information disclosed by numerous reliable studies were presented by the Southern lumbermen showing that living costs of their employees were considerably less than those of similar workers in other sections. Southern mills generally have

available at their doors an abundance of food and supplies produced in and near the mill community. The mill employees for the most part have ample grounds for cultivating gardens, raising poultry and hogs, and providing their own dairy products. Even where they do not produce them, they can be ob-



tained in the community at much lower cost than is borne by consumers in towns and cities.

In most cities and many other sections the cost of housing is the principal item in the cost of living, but in the Southern lumber industry it is a negligible factor. Many sawmill employees are furnished housing free by the mills, while numerous studies of groups of mills in many parts of the South show that rentals paid by sawmill employees living in company-owned houses ranged from 35 cents to \$3.25 a week and averaged \$1.38, for 4-room cottages for white tenants; and for negro tenants the rentals on 4-room houses ranged from 30 cents to \$2.40 per week and for 3-room houses from 25 cents to \$1 per week, and averaged 75 cents. These figures were taken from records of the larger Southern mills and do not represent conditions in numerous communities where there are very small mills, as practically all the small mills obtain their labor from neighboring farms, the employees living on the farms, working part time for the mills and part time on the farms. These workers provide much of their own food supply as other farmers do and have no rents to pay. As a matter of fact, the farms are the source of a great portion of the larger sawmills' labor also, operatives working part time only in the mills and their living cost is practically the same as that of strictly farm labor.

In Northern industrial sections fuel is an important item in the cost of living, and also an item of some importance in Southern towns and cities generally. In Southern lumber communities this item of cost is usually negligible. Wood is chiefly used for cooking and heating and there is an abundance of wood at hand for such purposes without cost to the operatives of both large and small mills.

Employees of Southern sawmills incur virtually no transportation expense in going to and from their work. Water, light and power usually are furnished by the larger mills either as part of the rental of their cottages, or at a nominal charge. Small mills do not furnish such facilities because they do not maintain communities in the same way as the large mills.

A report of the Southern Pine Association on "Labor Conditions in the Southern Pine Industry," compiled in March, 1934, disclosed that 104 out of 158 mills in a group replying to a questionnaire, provide for their labor during a shut-down period, through cash advances; food and clothing supplies; free rent, water, light, fuel, and medical care; creation of odd jobs about the plant; farm work, etc. The cost to the mill of this service per worker averaged about \$4.50 per week. Sixteen of the reporting mills absorb this expense at

no cost to their workmen, the others charge their employees in part or in full, payable when operations are resumed on terms within the workers' ability to pay. None of the mills reported any interest charge on cash loans or other advances made to their labor during shut-down periods.

A group of mills estimated that if the value of the free or low-cost services extended to their workers were added to the wages of those now employed at the Code minimum wage of 24 cents per hour, their hourly earnings would range from 25 to 60 cents for white workers and from 25 to 40 cents for negro employees.

As was brought out in the Southern lumber industry's brief presented to the Administration during the Code negotiations, there is great variance in conditions affecting the cost of lumber operations in different regions of the country and recognition must be given to these differences. There is vigorous competition between species of lumber from different regions. The maximum and average price that can be obtained for lumber is definitely limited by competitive considerations. The relationship of these prices to the prices of competing lumber from other regions of the industry is a definite fact. An important factor entering into these prices is labor costs. They are not and cannot be mathematically uniform, though they are far more nearly so relatively than mere statement of figures may indicate. To make a fair comparison different factors must be definitely weighted. Proper consideration must be given to the type of persons comprising the rank and file of the laborers, to geographical, climatic and other conditions, and to the actual productive capacity and relative efficiency of the labor.

Different regions do not require the same amount of man-power to produce a given quantity of lumber. Methods of operation necessarily are different, processes which in one region are performed by machine, in other regions must be performed by man-power. This is made plain by contrasting operating conditions obtaining in the Pacific coast lumber producing region with those in the South.

Calculations made from various studies indicate that the average lumber production per man per hour was 46.8 feet in the Pacific Coast states as contrasted with 24.6 feet in the South with its smaller units and less labor-saving machinery.

In view of the facts recited in its brief, and in the face of prevailing economic conditions in the industry, it required no little courage and faith for the Southern lumber industry to propose to the Administration the inclusion in the Lumber Code of a minimum wage of

22½ cents per hour in the South.

Despite the facts presented and the conclusions, the Administration raised the minimum hourly wage from the proposed 22½ cents to 24 cents, a level 15 per cent higher than in July 1929. Also the maximum hours of employment were reduced from the proposed 48 hours per week to 40 hours. This meant a reduction from 60 hours to 40 hours—or 33⅓ per cent.

Figures recently compiled by the Southern Pine Association from reports of mills show that for the first quarter of 1933 (before operation of the Code wages) the total strictly labor cost in producing 1000 feet of Southern pine lumber averaged \$5.37, while for the first quarter of 1934 (after Code wages were operative) this cost rose to an average of \$8.03, or \$2.66 per thousand feet more, an increase of 49.5 per cent. In July 1933, which was immediately prior to operation of Code wages, the strictly labor cost averaged \$5.67 per thousand feet, which in October, immediately after the Code wage scale became effective, advanced to \$8.77 per thousand feet, or \$3.10 per thousand feet more, an increase of 54.7 per cent. In contrast to these figures are those of the West Coast Lumbermen's Association, representing Southern pine's principal competitive species of lumber. The Pacific Coast manufacturers, although paying 42½ cents per hour minimum wage under the Code, compared to 24 cents per hour by Southern pine manufacturers, show total labor cost in producing 1000 feet of lumber in July, 1933, averaged \$3.98, while in October, 1933, labor costs increased to an average of \$5.31, or only \$1.33 per thousand feet more under Code wages, an advance of 33.4 per cent, compared to 54.7 per cent advance for Southern pine.

For almost one year the Southern lumber industry has been operating under the Code minimum wages of 24 cents per hour and a maximum of 40 hours per week, and as yet the volume of business necessary to maintain the present scale of wages and hours provided in the Code, has not come to the Southern lumber industry, and the apprehension over the industry's undertaking to raise minimum wages as expressed in the industry spokesman's conclusion still exists. The manufacturers' courage and confidence have been undergoing a severe test, and they have been bearing their added burdens, under the circumstances, with excellent fortitude on the whole. But certainly it would be utterly impossible for the Southern lumber industry to avoid bankruptcy were still further burdens placed upon it by eliminating the favoring wage differential or by any lowering whatever of the existing differential compared to competitive producing regions.



# CHEMICAL INDUSTRY LOOKING SOUTHWARD

By  
**Williams Haynes**

Publisher of "Chemical Industries"

**O**VER \$20,000,000 were spent for new chemical plants and equipment last year in the South. Half this tidy sum is being invested this year in the same way and in the same territory.

Even in normal times such a capital investment in any section of the country would make a notable expansion of our chemical productive capacity. That by far the greatest development of our most rapidly expanding industry should take place in such times as these and in the South is significant. That this development includes not only new products and new processes, but that it will also increase by a fifth the output of two of our oldest, big tonnage, most widely used, standard industrial chemicals—soda ash and caustic—gives this southern shift of chemical operations a very broad foundation.

## Chemical And Mechanical Processes

Making a chemical is quite different matter from fabricating a chair or spinning a bolt of cotton cloth. In the first place, all chemical manufacture is based on chemical reactions, and willy-nilly at

each step an entirely new product is produced with by-products that are themselves new and quite distinct materials. A pine tree may be made into a flag-pole or a plank or a penholder; but although the wood may be stained to simulate mahogany or painted to look like marble, it is still pine. But when common salt (sodium chloride, NaCl) is dissociated by an electric current in water, you get a reaction that in the chemist's shorthand is expressed:  $\text{NaCl} + \text{H}_2\text{O} = \text{NaOH} + \text{Cl} + \text{H}$ ; and you have the solid caustic soda (NaOH) with two gases, the pungent, yellowish, extremely active chlorine and the colorless, tasteless, very inert hydrogen. If you set out to produce any one of the three you must produce the other two, and of necessity you either use them or market them. In all chemical operations these conditions imposed by the by-products are as inviolate as "the laws of the Medes and Persians which changeth not."

There is a second condition in the making of chemicals which distinguishes it sharply from operations that weave or weld, cut up or bolt together raw materials in the diverse group of fabricating industries. The output of the fabricating industries bears a direct relationship to materials used. In chemical making slight variations in the quality of raw materials may mean considerable difference in the yields obtained. One of our commonest industrial chemicals, sulfuric acid, is produced from pure sulfur, from pyrite ores of metallic sulfides, and as a by-product from sulfur dioxide in smelter fumes. Caustic soda is made by two commercial processes that are as inherently different as planeing and painting. Moreover, within a single chemical operation a slight change in one step or a better control of time, of temperature, or of pressure may bring astonishing results. The fact that less than ten degrees difference in the temperature at which one reaction in making a certain vat dye increases the yield a third, explains not only the vital importance of constant research in chemical fields, but also the extreme uncertainties and instabilities of chemical manufacturing costs.

## Industrial Raw Materials

Finally, in considering the economics of any chemical operation, it must not be overlooked that chemicals are in the main industrial raw materials. We, all of us, consume a few ounces of chemicals

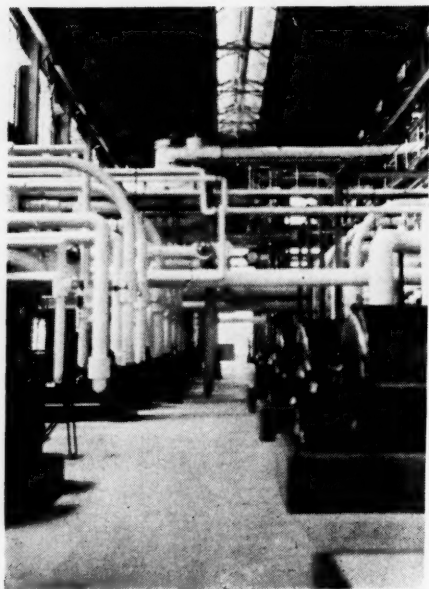
Mr. Haynes has recently completed a motor trip of more than 7,000 miles during which he visited all of the new chemical plants in the South and Southwest. His conclusions as to the trend of the industry to the South are based on more than fifteen years of contact with the business of making and selling chemicals. He is the author of the recently published standard textbook, "Chemical Economics."

as medicines. These are pitiful quantities compared with the vast tonnages of these same chemicals used in industry. It follows, therefore, that chemical industry is dependent upon other industries for its market, and we have a greater American chemical production—measured either in dollars or in pounds—than Germany, England, France, and Italy combined because of our greater industrial development. Contrariwise, there is virtually no chemical industry in South America because that whole continent's chemical consumption is less than that of North Carolina with its fertilizer and textile industries. Finally, it must not be forgotten that chemicals as industrial raw materials perform the economic function of making goods cheaper and quicker and better by means of chemical processes than they can be made by hand or by mechanical processes. Hence strong pressure is always exerted to bring chemical costs down. Moreover, many of our most important chemicals are low priced, bulky or heavy materials, so that shipping costs are frequently a prime consideration.

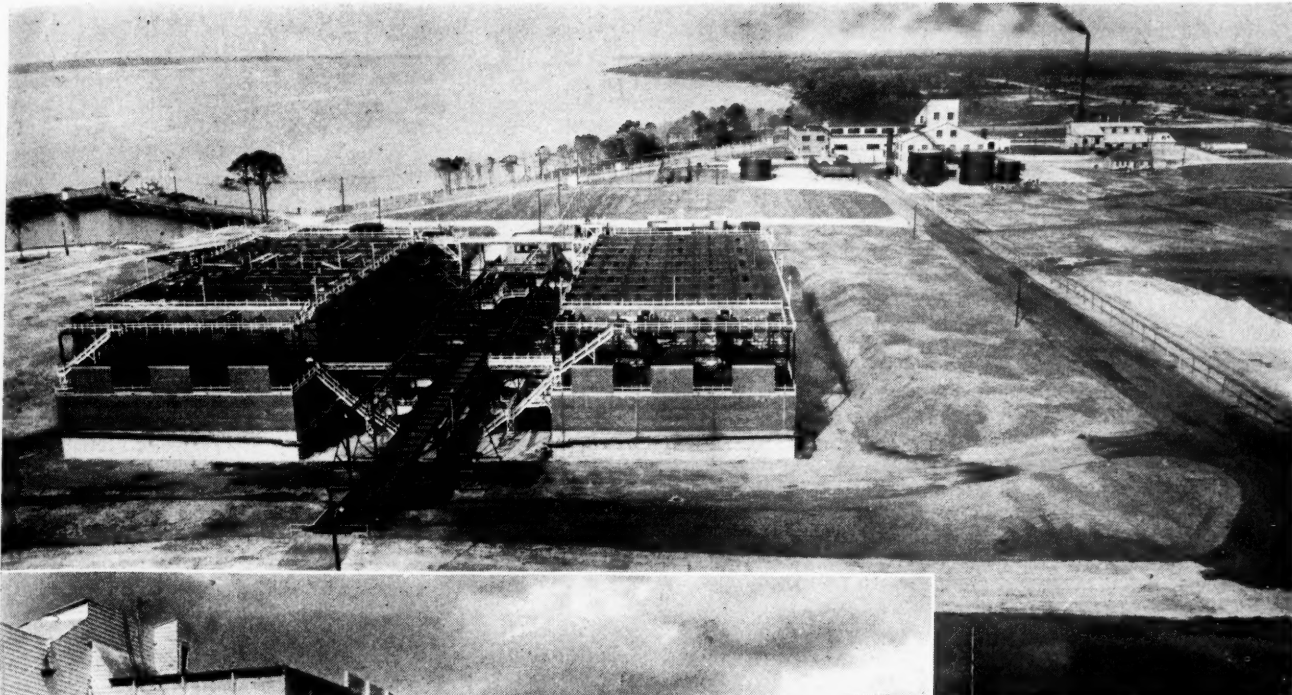
It is quite necessary to have all these different factors quite clearly in mind, if we are to appreciate why our chemical industrialists are looking southwards or to appraise what recent chemical developments mean to the South.

(Continued on page 52)

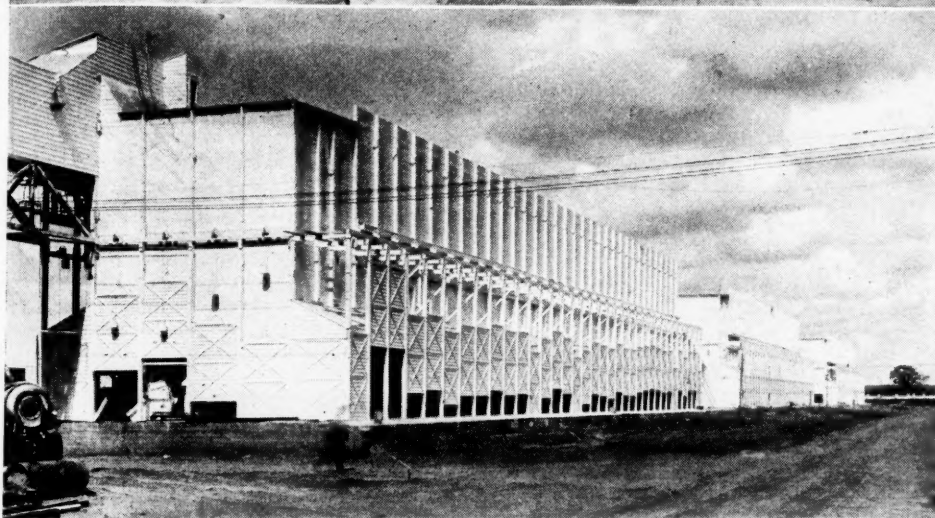
Interior Power Plant  
Freeport Sulphur Co., Grande Ecaille, La.





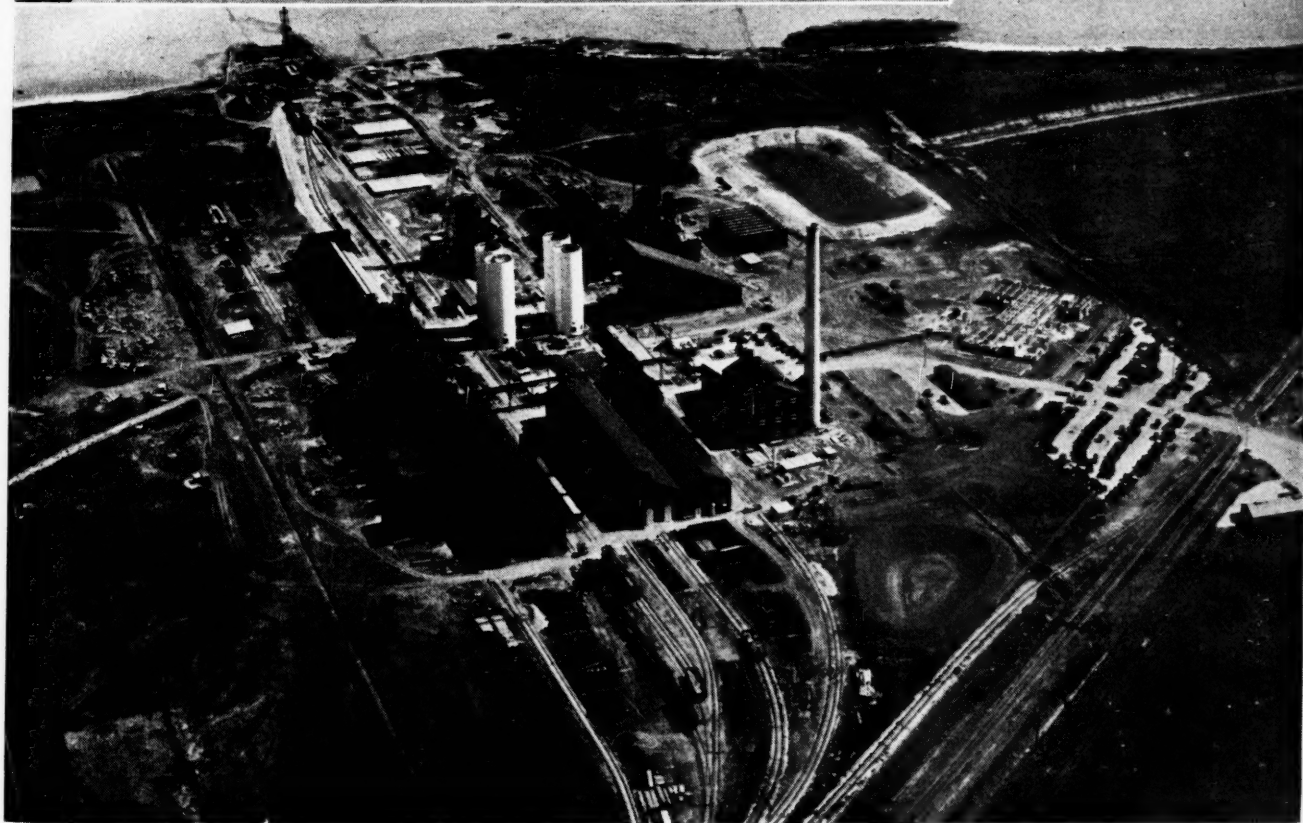


Bromine Plant of Ethyl Dow Corporation at Wilmington, N. C.



Left—Texas Salt Products Co., Tulsa, Okla.

Southern Alkali Corporation, Corpus Christi, Tex.



# RIVER AND HARBOR DEVELOPMENTS IN SOUTH

By  
**Col. Clarence B. Douglas**  
Vice-President, National Rivers & Harbors  
Congress

**C**ARRYING out its campaign pledge for "adequate flood control and waterways," the Administration has continued the development of the nation's rivers and harbors under its public works program. Projects in the Southern States, embracing the territory from Maryland to Texas, have shared in this work.

## \$85,000,000 for Southern Rivers and Harbors

Of a total of \$92,528,000 recently allotted by the Public Works Administration to river and harbor projects from the additional \$500,000,000 emergency public works appropriation, \$15,093,000 was for projects in the Southern States, as follows:

Cape Fear River, N. C., to Winyah Bay, S. C., Waterway .....	\$650,000
Caloosahatchee & Lake Okechobee Drainage Areas, Fla. ....	3,700,000
Tampa Harbor, Fla. ....	500,000
Houston Ship Channel, Tex. ....	1,043,000
Kanawha River, W. Va. ....	2,200,000
Tygart Reservoir, W. Va. ....	7,000,000
Total .....	\$15,093,000

**Lock No. 1, Kanawha River, W. Va.**  
PWA project—Bozo & Ritchie, Ravenswood, W. Va., excavating contract.



Allotments totaling \$44,000,000 were made by the Public Works Administration during the fall of 1933 to be applied to prosecution of work on Mississippi River flood control. These funds, in addition to funds amounting to substantially \$40,000,000 made available from regular appropriations for work during the fiscal year 1935 are being applied to work on the project, the major portion of which is for work in the States of Louisiana, Mississippi, Arkansas, and Tennessee. The work involves the construction of levees, revetment, contraction works, and dredging. It is estimated that the expenditures from the above funds for work in the States mentioned will be about as follows:

Louisiana .....	\$35,000,000
Mississippi .....	20,000,000
Arkansas .....	15,000,000
Tennessee .....	5,000,000

## Status of Work on Southern Projects

The following statement prepared in the office of Major General Edward M. Markham, Chief of Engineers of the Army, gives the status of work on the river and harbor and flood control projects under the supervision of the Army Engineers in the Southern States:

### Maryland

#### Ocean City Harbor and Sinepuxent Bay:

Under an allotment of \$281,000 made by the PWA together with the additional sum of \$500,000 contributed by the State of Maryland, work is being prosecuted on the construction of an inlet between the Atlantic Ocean and Ocean City, to be protected by jetties. Work on the north jetty is being carried out by con-

Over \$85,000,000 have been made available for Southern Waterway Improvements in the past year. Included are the recent PWA allotments of \$15,000,000 for rivers and harbors projects and approximately \$70,000,000 for flood control on the Mississippi River and tributaries in the Southern States.

tract. Construction of the south jetty has been advertised and the channel between the jetties will be dredged immediately upon completion of the jetty construction.

#### Knapps Narrows:

An allotment of \$68,700 was made by the PWA to be applied to dredging a channel 9 feet deep and 75 feet wide. Bids for the performance of this work were opened August 24th.

#### Upper Thoroughfare—Deals Island:

Under a PWA allotment of \$47,000 a 9-foot channel protected by converging breakwaters was completed during June, 1934.

### Virginia

#### James River:

A PWA allotment of \$595,000 is being applied to dredging a cut-off channel at Turkey's Island, in connection with the project for a 25-foot channel to Richmond. The work is being done by contract and is about 95 per cent completed.

#### Tangier Channel:

A PWA allotment of \$37,000 is being applied to dredging a 7-foot channel from Tangier Sound to the town of Tangier, together with a turning basin. The work is 90 per cent completed.

### North Carolina

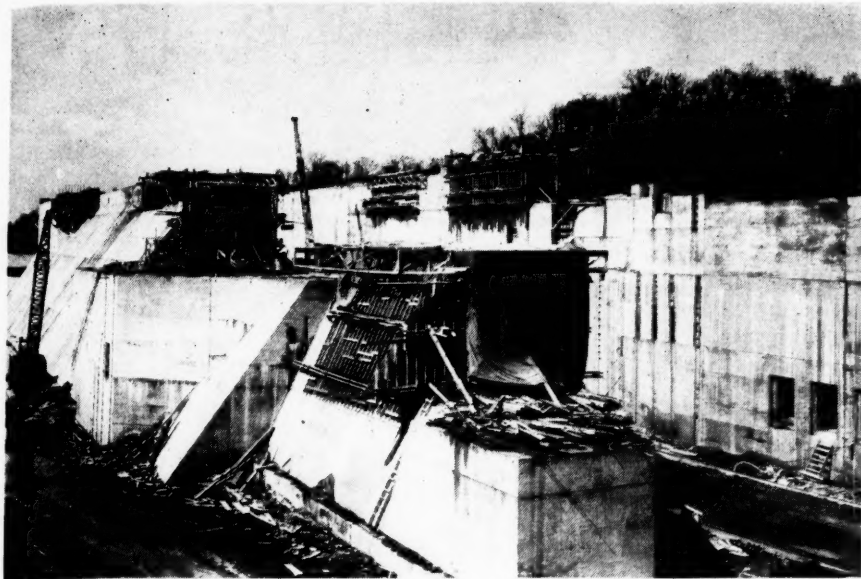
#### Cape Fear River, N. C.—Winyah Bay, S. C.:

Funds in the amount of \$1,900,000, allotted by the PWA, together with funds provided from regular appropriations, are being applied to work on the construction of an 8-foot Intracoastal Waterway and to the construction of three bridges over the waterway in Horry County, S. C. The total estimated cost of this project is about \$6,000,000. Work is being actively prosecuted and the project is expected to be entirely completed during the fiscal year 1937.

#### Cape Fear River Above Wilmington:

A PWA allotment of \$1,120,000 is being applied to the construction of an additional lock and dam and the raising or repairing of the two existing locks and dams and dredging to provide reliable 8-foot navigation between Wilmington and Fayetteville, to provide a con-





**Joe Wheeler Dam.**

TVA power project (lock and dam No. 3) on Tennessee River—Stevens Bros. & The Miller-Hutchinson Co., New Orleans, contractor.

nection with the Intracoastal Waterway. Work is underway by contract.

**Channel Between Pamlico Sound and Beaufort:**

Contract has been entered into for dredging a connecting channel 7 feet deep and 75 feet wide, payment to be made from the allotment of \$41,400, made by the PWA. The work is expected to be completed during the present calendar year.

**South Carolina**

**Charleston Harbor:**

A PWA allotment of \$176,400 is being applied to dredging in the jetty channel by Government plant, the work being about 48 per cent completed.

**Winyah Bay to Charleston Waterway:**

Funds in the amount of \$1,296,000 have been allotted by the PWA and are being applied to the construction of a 10-foot waterway between these points. Work is being actively prosecuted by contract and by Government plant, and is expected to be completed during the spring of 1935.

**Georgia**

**Brunswick Harbor:**

A PWA allotment of \$180,000 is being applied to the enlargement of the bar channel, the work being performed by Government plant.

**Savannah River below Augusta:**

A PWA allotment of \$1,175,000 is to be applied to construction of a lock and dam and regulating works, to provide a 6-foot navigation channel between Savannah and Augusta. Bids for the construction of the lock and dam were opened on August 31st.

**Florida**

**Jacksonville to Miami Intracoastal Waterway:**

This project provides for a waterway 8 feet deep and 100 feet wide, at an estimated cost of \$6,500,000. Funds in the amount of \$2,000,000, provided by the PWA, together with allotments made

from regular appropriations, are expected to result in the completion of the waterway during the present calendar year.

**Fort Pierce Harbor:**

A PWA allotment of \$250,000 is being applied under contract to the repair of jetties forming a part of the 25-foot project at this location which was constructed by local interests. The work was about 95 per cent completed.

**Miami Harbor:**

A PWA fund of \$2,202,000 is being applied to deepening the channel and turning basin to 30 feet. The funds available, while not sufficient to complete all contemplated work, will greatly aid navigation. The work with available funds is expected to be completed during the summer of 1935.

**Caloosahatchee River and Lake Okeechobee Drainage Areas:**

This combined river and harbor and flood control project, estimated to cost in excess of \$15,000,000, is being actively prosecuted, the funds allotted from regular appropriations and an allocation of \$7,900,000 by the PWA. The funds provided to date are expected to afford

protection to lands on the south shore of Lake Okeechobee and to provide for partial construction of works on the north shore of Lake Okeechobee and in the Caloosahatchee River.

**Tampa Harbor:**

A PWA allotment of \$727,500 is being applied to deepening the inner channels of this important harbor. The work is being done by contract and was 62 per cent completed on July 31st. An additional allotment of \$500,000 has recently been made by the PWA and is to be applied to dredging in the entrance channel.

**St. Andrews Bay:**

PWA funds of \$480,500 were applied to the construction of a new 27-foot channel at this harbor.

**Pensacola Harbor:**

PWA funds of \$131,500 have been applied to dredging a 30-foot channel, work thereon having been completed.

**Alabama**

**Alabama River:**

Work under an allotment of \$140,000 by the PWA is being prosecuted by Government plant and hired labor to dredging and dike construction to afford better navigation facilities.

**Black Warrior, Warrior and Tombigbee Rivers:**

An allotment of \$80,000 is being applied to snagging and rock removal in this important waterway, the work being completed on June 30, 1934.

**Tennessee River:**

With funds allotted from regular appropriations, supplemented by funds provided by the Tennessee Valley Authority, the construction of Lock No. 3 on the Tennessee River, located about 18 miles above Florence, is being carried out by contract.

**Mississippi**

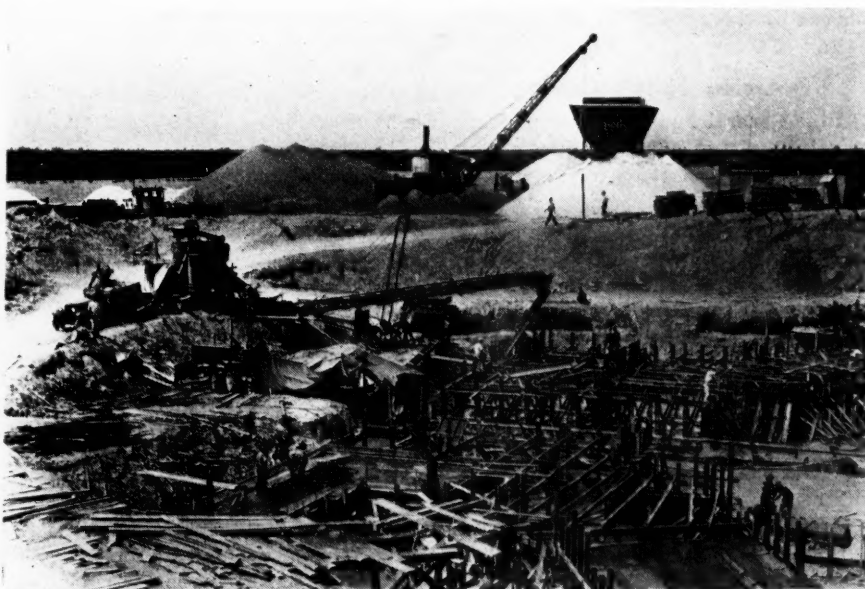
**Gulfport Harbor and Ship Island Pass:**

A PWA allotment of \$50,000 is being applied to enlargement of the anchorage basin.

(Continued on page 54)

**Hurricane Gate Under Construction, Lake Okeechobee, Fla.**

E. H. Latham Co., contractor, PWA project.





# SALES TAX ACCOMPLISHMENTS IN NORTH CAROLINA

By

**Alphonsus Cobb**

President N. C. Association of Real Estate  
Boards, Durham, N. C.

**T**HE Sales Tax has been a great success in North Carolina. It has accomplished the things which its advocates expected. It has not brought about any of the dire results its opponents predicted.

At the close of the fiscal year ending June 30, 1934, with the sales tax in effect for one year, the State closed its books with a net surplus in its General Fund of \$74,072 without any borrowing whatever during the year.

In the Highway Fund, when the books were closed, there was a cash surplus of nearly \$5,000,000.

Compare the surplus in the General Fund with deficits in 1932 of \$4,320,410 and in 1933 of \$8,410,600.

**This unusual feat of State financing was accomplished by the State without levying any tax whatever upon real or personal property.**

The State's revenues have been collected from the following sources: Inheritance taxes, \$421,395; license taxes, \$2,396,704; franchise taxes, \$6,454,792; income taxes, \$6,170,857; sales taxes, \$6,011,700; beer taxes, \$337,607; non-tax revenues, \$1,009,219.

The cost of maintenance of all of the highways of the State and payment of maturities of bonds and interest were financed by the automobile licenses and gas tax of 6 cents.

## Protected State's Credit

In the General Fund the revenue from the sales tax was sufficient to take care of what had been the average annual deficit for the two preceding years. The deficits accumulated in the years ending June '32 and '33 had occurred in spite of the slashing of all State expenditures under the Executive Budget System. The reason the deficits occurred was that under the Law of the State teachers' salaries could not be cut but 10 per cent.

In the fall of 1932 North Carolina's finances were in an unfortunate condition. Its bonds were being sold on 9 and 10 per cent basis. To provide for the recurring deficit short term loans had been negotiated. Bankers holding this paper demanded payment and the

State was being required to pay 6% interest on these loans.

Immediately following the enactment of the sales tax in 1933 and thereby balancing the State's budget, the credit situation of the State immediately changed. Its bonds in a short time were selling above par; the notes outstanding were renewable with interest rates decreased to 4% at the last renewal.

**Within recent weeks the State has refunded the notes with a bond issue which sold on the basis of 3.76%, the lowest rate at which any bonds of this State have been sold. As pointed out above, the State has operated on a cash basis and balanced its budget in fact and in cash. It has put its financial house in order.**

## Additional State Obligations

In 1933 the State assumed the additional obligation of paying the entire cost of operation for uniform school system throughout the State for eight months. Heretofore, it had undertaken to support a six months term and to make contribution to equalize the cost in special tax districts of two additional months.

In 1931 the legislature fought off the enactment of the sales tax and as a compromise, after assuming responsibility for operation of a six months school term, levied a state-wide tax of 15 cents on the \$100 property value. The demand for property tax relief for 1933 required that the 15 cent levy be withdrawn and that the State assume full responsibility for the schools without a property tax and this is just exactly what the legislature of 1933 did.

In order to accomplish this seemingly impossible thing, it was necessary for the State to reduce the teachers' salaries in the State approximately 30%. It reduced, including former reductions, the compensation of State employees 38%. Every teacher in the State has been paid in full and on time. Schools have been operating for an average of 160 days against 145 day average in 1932. Out of the school enrollment of 925,000, 250,000 children have been transported to and from school every day of this time.

## Three Definite Accomplishments

The first definite accomplishment of the enactment of the sales tax, is the saving of the State's credit and the putting of its financial house in order; a second accomplishment is the saving of

the schools in the State from almost certain collapse and the third definite accomplishment and perhaps the most important one from the standpoint of the property owner has been the relief of property from State taxes.

The sales tax was not just another tax in North Carolina. It was a tax in lieu of property taxes. By some small increases in rates of indirect taxation plus the sales tax, plus economies in the operation of State Government, including the cost of schools, the results pointed out have been achieved.

By an Act of the Legislature of 1933 property taxes levied for support of schools in special districts, county-wide and special charter districts in the State of North Carolina were relieved amounting to \$11,500,000. None of this cost could be put back on the taxpayer except by a vote of the people by which they were authorized to supplement, if desired, teachers' salaries. Very few localities voted any special supplements.

## Property Tax Reduced

The tax on property was actually reduced on an average of about 35% as reflected in levies made by local authorities in the summer of 1933. North Carolina's property tax rate was cut down to a point which could be paid by the property owner. The average county property tax rate of 1933 was 88 cents on the \$100 which produced a revenue of \$18,360,885. For the counties, without levying taxes, to have supported the schools, furnishing the same amount furnished by the State, it would have required an average tax rate in the counties of \$1.64, producing \$34,328,861. By consolidation of operation of schools under the State-wide plan, the cost of operation of schools has been reduced from \$23,000,000 to \$16,000,000; if county operated, this additional \$7,000,000 would, under the old system, have been added to this total cost.

And so I repeat that the third great accomplishment of the sales tax in North Carolina was the actual reduction in property taxes to the extent that it could be felt by the taxpayer.

## Merchant's Fears Unrealized

The legislature of 1933 was told by representatives of the merchants who swarmed the capitol in great numbers, that enacting the sales tax meant the destruction of the merchants in North Carolina, that it would drive business out of the State into other States, it

(Continued on page 58)

# SOUTH WAKES UP TO VALUE OF FOREST LANDS

## Basis for Permanent Industrial Benefits to South From New Forest Conservation Policy

**T**HE second-growth forests of the South hold the key to permanent industrial developments in the area, in the opinion of E. L. Demmon, director of the Southern Forest Experiment Station of the U. S. Forest Service.

In no other forest region is there greater industrial opportunity for full forestry development. "The original stands of virgin forest have gradually disappeared and the use of the products of second-growth forests has increased. The Copeland Report, 'A National Plan

for American Forestry,' prepared by the Forest Service, indicates that forestry practice beyond simple fire protection is in force on 4,109,999 acres in the South. This includes two grades of forest management: (1) Conservative cutting, planting, leaving seed trees, and other practical measures for improving production, without definite plans for sustained yield, on 2,755,000 acres; and (2) permanent forest-land management and organized plans for sustained yield on 1,354,000 acres."

"To many people," says Mr. Demmon, "forestry conveys the idea of tree planting. The South is fortunate in that most of its commercially important species can be reproduced before or during

logging, or by leaving a few trees for natural reseeding after logging, without resorting to planting. There are large areas in the South, however, which have been cut so clean or burned so severely that planting will be required. It is estimated that during the next 20-year period an area of 5,570,000 acres in the South could well be planted to forest trees. Planting costs would range from \$3 to \$7 per acre. Up to 1932 the total area planted in the South was only 73,248 acres; about two-thirds by lumber companies, and most of the remainder by farmers.

"The forest-products industries have accepted a conservation clause in their National Recovery Act code, and have pledged themselves to measures necessary to conserve forests and to obtain sustained-yield production. This should mean that forest land will grow timber continuously and that the forest industries can operate on a continuing basis. This kind of conservation of the forests should include protection from uncontrolled fire, from logging injuries, and from epidemics of insects and diseases. It is also essential to leave trees enough to insure reproduction and to adopt conservative turpentining methods.

"These measures do not, however, guarantee a sustained yield, which is the ideal of forestry. Intensive forestry requires careful preliminary study of each forest tract and preparation of working plans, which will provide for continuous operation and for a profit to the operator. Owners and foresters should tackle the problems together."

The South is becoming interested in the conservation of its forests, says Mr. Demmon, and is making progress in utilizing its forest lands. Each of the Southern States now has an organized forestry department, with a technically trained forester in charge. Most of the advance has been within the last 10 years. Control of forest fires is still the main activity in these State forestry departments. Only small areas of State-owned lands are now under forest administration (22 units with a net area of 45,006 acres in seven Southern States in 1932).

### Proper Forest Treatment for Perpetual Tree Crop

Courtesy of J. T. Kollock, Inc.





# 92 PER CENT—8 MONTHS GAIN IN SOUTHERN CONSTRUCTION

**A**UGUST construction awards in the sixteen Southern States amounted to \$43,157,000, bringing the total for the eight-month period to \$346,187,000. The August total exceeded by 5 per cent the July awards of \$41,051,000, and shows a gain of 13 per cent over the August, 1933, total of \$29,351,000.

The January to August total exceeds by 92 per cent the figure of \$180,997,000, representing the aggregate value of contracts let in the like period of 1933, and surpasses by 36 per cent the \$254,545,000 of construction awards in the first eight months of 1932.

## Road and Bridge Construction in First Position

The eight-month total of \$137,827,000 representing awards for road, paving and bridge projects places this major classification first in importance considering the dollar value of contracts. Judging from the large volume of "planned" work road contracts will be heavy in the next few months in the South, in which section it is practicable to carry on construction operations of the kind through the winter months.

## \$115,000,000 Industrial and Engineering Contracts Awarded

Industrial and engineering projects placed under contract in the eight-month

period call for a total expenditure of \$115,281,000, placing this classification second only to road and bridge work. The August total was \$19,471,000, as compared with \$17,950,000 of industrial and engineering awards during July.

Industrial plant expansion in the South during August called for an outlay of \$3,429,000, as compared with \$11,698,000 in July when several major new enterprises for which contracts were let swelled the total. Included in the August list are \$10,000 filling stations, bus and truck terminals, power and boiler plants, textile mills, canning and packing plants and like factories. Industrialists are investing in new and highly efficient machinery, modernizing power plant equipment and boiler house units, installing sprinkler systems to cut insurance costs, putting on new roofs, repairing sidewalls, painting plant structures and undertaking like jobs.

## Flood Control Work Goes Forward on Wide Front

Levee, revetment and dike construction awards reached a high total last month, running to \$11,886,000, in line with the aim of United States Army Engineers to get flood-control, rivers and harbors projects under way in volume, following the allocation of funds available for the fiscal year which started on July 1.

Also, the most modern and highly efficient power tools and most advanced construction methods thus far devised are employed so that unit costs are exceptionally low.

## Rivers and Harbors Projects Under Way in Volume

Dredging contracts placed last month totaling \$1,751,000 brought the eight-month figure to \$12,036,000. In addition to expenditures for dredging projects calling for removal of from 15,000 to 17,000,000 cubic yards each, there are the allied jobs such as building of jetties, erection of seawalls and breakwaters and the construction of port terminal facilities such as docks, piers, warehouses, etc.

## Sewers and Water Systems for Growing Communities

Sewer and water works projects continue to hold a prominent place in the South's construction program, awards last month running to \$1,938,000. The eight-month total exceeds \$24,765,000. This means that Southern communities are undertaking projects calculated to provide adequate storm and sanitary sewer systems, disposal units and water distribution systems together with sources of supply in the form of reservoirs or driven wells. The jobs involve practically every type of construction.

Judging from the total representing "planned" sewer and water projects and the large number of applications for PWA loans now pending to finance such jobs this class of work will continue at high level.

## Private Building Awards Total \$22,229,000

Private building awards in the first eight months of 1934 amount to \$22,229,000, with dwelling construction heading the list with a valuation in new contracts of \$12,573,000. Store buildings placed under contract in the period will cost \$3,446,000, while apartment house and hotel construction awards call for an outlay of \$2,234,000. Bank and office building awards exceeded \$2,560,000, January to August, and church building contracts let call for an expenditure of over \$1,000,000.

Representative projects regarding which preliminary announcements were made last month or which were advanced to the "bids asked" or "contracts let" stage during August are briefly set forth in the following pages.

## SOUTHERN CONSTRUCTION ACTIVITY

	August, 1934		January-August, 1934	
	Contracts Awarded	Contracts to be Awarded	Contracts Awarded	Contracts to be Awarded
<b>General Building</b>				
Apartment and Hotels.....	\$506,000	\$1,693,000	\$2,234,000	\$10,855,000
Association and Fraternal.....			415,000	630,000
Bank and Office.....	617,000	55,000	2,560,000	3,668,000
Churches .....	118,000	371,000	1,001,000	2,547,000
Dwellings .....	1,103,000	2,089,000	12,573,000	21,861,000
Stores .....	618,000	910,000	3,446,000	4,960,000
	<b>\$2,962,000</b>	<b>\$5,118,000</b>	<b>\$22,229,000</b>	<b>\$44,521,000</b>
<b>Public Buildings</b>				
City, County, Government and State .....	\$4,579,000	\$6,274,000	\$48,804,000	\$59,115,000
Schools .....	3,662,000	8,800,000	22,046,000	64,095,000
	<b>\$8,241,000</b>	<b>\$15,074,000</b>	<b>\$70,850,000</b>	<b>\$123,210,000</b>
<b>Roads, Streets and Paving.....</b>	<b>\$12,483,000</b>	<b>\$11,475,000</b>	<b>\$137,827,000</b>	<b>\$96,226,000</b>
<b>Industrial and Engineering Projects</b>				
Dredgng .....	\$1,751,000	\$5,668,000	\$12,036,000	\$48,428,000
Filling Stations, Garages, etc...	467,000	297,000	2,203,000	2,853,000
Industrial Plants .....	3,429,000	9,925,000	50,761,000	149,013,000
Levees, Revetments, Dikes, etc...	11,886,000	7,598,000	25,516,000	20,889,000
Sewers, Drainage and Waterworks	1,938,000	12,956,000	24,765,000	101,330,000
	<b>\$19,471,000</b>	<b>\$36,444,000</b>	<b>\$115,281,000</b>	<b>\$322,513,000</b>
<b>Total .....</b>	<b>\$43,157,000</b>	<b>\$68,111,000</b>	<b>\$346,187,000</b>	<b>\$586,470,000</b>



# VIRGINIA BRIDGE

Presents

## TODAY'S AND TOMORROW'S—BRIDGES

An Epic in Six Pictures



Heavy traffic requires strong bridges, wide rivers, long spans. We want to get "across the river" quick, older methods are too slow. Also we want to be sure we can get across anytime and all the time.

As in the case of the skyscraper, steel and the steel engineer and builder have made possible our long-span bridges thereby keeping clear a wide channel in navigable waterways and also avoiding the hazards of deep water foundations.

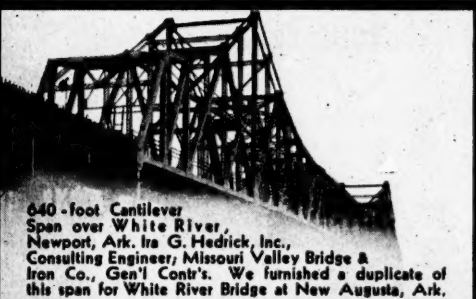
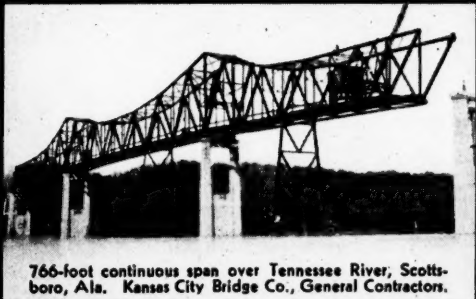
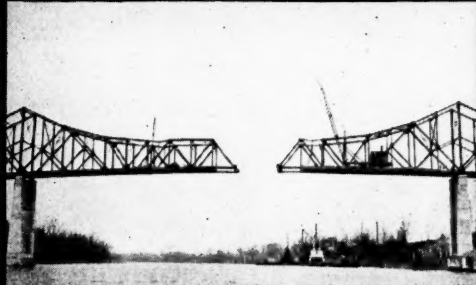
More and more State highway departments have been enabled to connect up important routes with a safe dependable steel bridge, good for today and many tomorrows.

Our Company has had a considerable part in this, just as it has had in steel bridge and building construction generally throughout the South and West for nearly 40 years.



**VIRGINIA BRIDGE & IRON CO.**

Roanoke Birmingham Memphis Atlanta New York  
Los Angeles Charlotte Dallas El Paso



# IMPORTANT CONSTRUCTION PROJECTS OF THE MONTH

THE following selected news items represent some of the individual building and engineering projects in the South that make up the totals given in the construction summary for August on page 26 of this issue:

## Proposed Work

Ala., Decatur—City has PWA loan and grant of \$350,000 for power plant.

Fla., Miami—Public Works Administration allotted \$320,000 for three additions to Jackson Memorial Hospital: 6-story building for private patients; 3-story nurses' home, 1-story service building, hospital building to contain 127 rooms with 191 beds, library, record room, administration offices, clinics and assembly hall; nurses' home to include 6 classrooms; service building to include kitchen and dining room; Dr. R. C. Woodward, Supt.; George L. Pfeiffer, Archt.

Fla., Pensacola—Guy H. Spearman, Pres., Spearman Brewing Co., plans constructing plant, corner L St. and Barrancas Ave., contracts let for copper furnishings, brick and other material for building; capacity 20,000 bbls. yearly; Richard Griesser, 64 W. Randolph, Chicago, Ill.; will supervise work and installation of machinery; fixtures furnished by Atlas Copper and Brass Mfg. Co., 2734 High St., Chicago, Ill.; cost \$250,000.

Fla., Tallahassee—Leon County Board of Education will have working plans and specifications completed in about 3 weeks by M. Leo Elliott, Inc., Tampa, Fla., for \$300,000 high school with \$40,000 furnishings and equipment; fireproof; 340-ft. front; 3 stories; linoleum and masonite floors, clay tile roof; F. S. Hartsfield, Supt. of Public Instruction.

Ky., Barbourville—Kentucky-West Virginia Utilities Co., construct filtration plant; cost \$30,000.

Md., Baltimore—Chevrolet Motor Co., Detroit, Mich., announced site of 45 acres selected on Broening Hwy. directly across from Camp Holabird in Canton Industrial District, for assembly plant; plant will have annual capacity of approximately 85,000 cars and trucks; erect Fisher Body plant adjacent to Chevrolet assembly plant where closed bodies for Chevrolet and special truck bodies will be built and conveyed to the assembly line in main plant; Albert H. Kahn, Inc., Detroit, Mich., Archt., will direct construction operations; buildings will be modern, fireproof structures of conc., brick, tile and struc. steel.

Md., Baltimore—Southern States Cooperative Mills, 2101 E. Fort Ave., will have plans ready for bids about Sept. 15 for feed plant alteration and addition; cost \$125,000; rein. conc.; 72x93 and 31x40 ft.; work includes

work house, 6 grain storage tanks, sacked feed storage, track shed and alteration to present feed plant; Carlstrand Engineering Co., 10 W. Chase St., Engrs.; Empire Construction Co., 31 S. Calvert St., has contract for wood piles and excavation.

Md., Cumberland—Gannett, Eastman & Fleming, Inc., Harrisburg, Pa., employed by city to supervise construction of intercepting sewer system, now being designed and will be financed by sale of city bonds recently consummated and a PWA grant, a total of about \$350,000; bids will probably be called for in 2 weeks.

Md., Sykesville—The \$100,000 ward building proposed for the Sykesville State Hospital will be of brick and concrete construction; plans not completed; Henry P. Hopkins, Archt., 10 E. Mulberry St., Baltimore.

Mo., Clayton—St. Louis County Sanitary Sewer District votes Sept. 25 on proposed bond issue of \$5,878,000 to build modern sewer system in county; Owen G. Jackson, Chrmn. Bd. of Election Commrs.

Tennessee—War Dept. approved plans of Dept. of Highways and Public Works, Nashville, for bridge over Cumberland River, at Carthage, to replace existing bridge.

Tex., Beaumont—Gates Park, Inc., O. E. Hause, plans race track and facilities seven miles out of city; estimated cost \$400,000; grandstand to seat 6400, 18 stables to cost \$5000 each, etc.

Tex., Austin—City, Guiton Morgan, City Mgr., is having plans prepared by Hawley, Freese & Nichols, Capps Building, Fort Worth, Tex., consulting engineers, for water line extensions funds from \$125,000 bond issue and \$40,000 Government grant. 7-13

Tex., Kingsville—Plans are under way for two dormitories at Texas College of Arts and Industries; \$300,000; brick and tile, tile roof, steel sash; John M. Marriott, Archt., Frost National Bank Bldg.; Phelps & De-wees, Conslt. Archts., Gunter Bldg.; Mathews & Kenan, Struc. Engrs., Smith-Young Tower; L. D. Royer, Mech. Engr., Smith Young Tower; all San Antonio.

Tex., Roma—Roma Consolidated School District No. 2, Starr County, Florence J. Scott, Supt. of Schools, Rio Grande; soon ask bids on 52x280-ft. grade school; 1 and 2 stories, 14 classrooms and auditorium, brick structural clay tile, wood and reinforced concrete, built-up roof, metal lath and plaster, wood sash, asphalt tile, wood and concrete floors; Henry T. Phelps, Archt., Hicks Bldg., San Antonio.

W. Va., Hinton—State Road Comsn., Charleston, approved option granted by City Council providing for construction of two new bridges; one over New River and other over Greenbrier River, connecting routes 3 and 44 at Bellepoint; \$300,000; start construction shortly.

Some Major Industrial, Engineering and Building Contracts Proposed, To Be Let and Awarded in the South. Further details and complete Record of Southern Construction and New Enterprises Are Given in the MANUFACTURERS RECORD DAILY CONSTRUCTION BULLETIN.

## Bids Asked

Ala., Anniston—Treasury Dept., procurement Division, Public Works Branch, Washington, opens bids Sept. 17 for extension and remodeling post office, Noble and 12th St.; involves a marble structure, 59x59 ft., 2 stories, flat roof.

Ark., Benton—Arkansas Construction Comsn., Little Rock, opens bids Oct. 10 for miscellaneous equipment for Farm Colony, State Hospital, Saline County; includes beds, mattresses, pillows, window, shades, furniture, kitchen utensils, chinaware, glassware silverware; Mann, Wanger & King, Archts.

D. C., Washington—Navy Dept., Bureau of Yards and Docks, open bids Sept. 29 for bituminous macadam roads at Naval Observatory, Spec. 7772; bids Aug. 29 for weather-stripping 8 openings at Naval Observatory, Spec. 7782.

D. C., Washington—Treasury Dept., Procurement Division, Public Works Branch, opens bids Sept. 11 for scientific laboratory equipment, miscellaneous building changes, and construction of constant temperature rooms, Dept. of Agriculture extensible building.

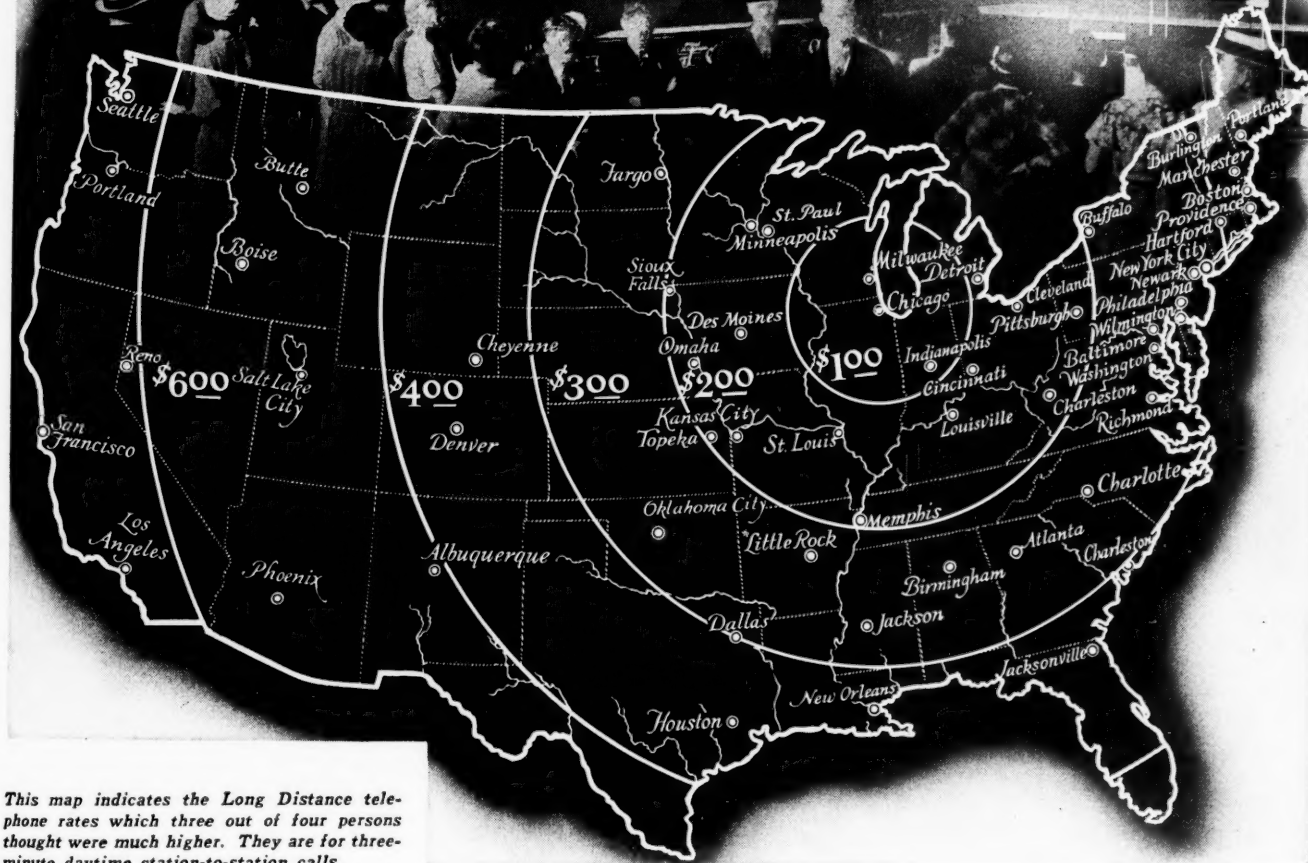
Florida—U. S. Engineer, Jacksonville, opens bids Sept. 14 for construction 17 or smaller number of drainage spillway structures on banks of St. Lucie Canal, between Lock 1, near Lake Okeechobee and Lock 2, west of Stuart, Fla.

Fla., Leesburg—Treasury Dept., Procurement Division, Public Works Branch, Washington, D. C., opens bids Sept. 18 for construction of post office.

Fla., Miami—Dade County, Edmund Friedman, Engr., opens bids Sept. 11 for bridge over Oleta River, on Sunny Isles Road; 155 ft. long, 24 ft. wide; creosoted wood piling, steel stringers, concrete deck, pipe rail.

(Continued on page 30)

# 76% GUESSED HIGH



This map indicates the Long Distance telephone rates which three out of four persons thought were much higher. They are for three-minute daytime station-to-station calls.

AT THE Century of Progress Exposition last year, more than 25,000 persons made Long Distance telephone calls from the Bell System exhibit to various cities throughout the United States.

Many of the people did not know what the calls really cost. Three-fourths of those who guessed thought that the rates were higher than they actually are. One-third thought them to be double or more. Almost all were amazed at the low cost of Long Distance calls.

You, too, may be pleasantly surprised at the low cost of telephone calls to other cities. You will find many of the rates in your own



telephone directory and the Long Distance operator will gladly furnish any others. From both your office and home, "Long Distance" is one of the most useful services at your command.

Business men who know the telephone best say it is the ideal way to handle much of their out-of-town business. And there's genuine pleasure in having frequent *telephone visits* with relatives and friends in other cities . . . especially at night, when calling costs even less than during the daytime.

At 7 P. M. each night most station-to-station rates are reduced about 15%, and at 8:30 P. M. about 40%.



## Selected News Items that Indicate Variety of Construction Work in the South Reported Dur- ing August by Manufac- turers Record Daily Con- struction Bulletin.

### Bids Asked

(Continued from page 28)

Ga., Butler—Taylor County opens bids Sept. 10 for \$52,000 court house; 2 stories and basement, concrete foundations, brick walls, structural steel, composition roofing, steel sash; F. Roy Duncan, Archt., Columbus; prospective estimators include: Grahn Construction Co., Ray M. Lee Co., both Atlanta.

Ga., Sparta—Hancock County Board of Roads and Revenue opens bids Sept. 13, extended from Aug. 30, for construction of \$50,000 school; 215 x 174 ft., U-shaped, 1 story, 22 rooms and auditorium; brick walls, concrete foundations, cast stone trim, asbestos roofing, steel sash, steam heat; Dennis & Dennis, Archts., Mulberry St., Macon.

Ga., Valdosta—Treasury Dept., Procurement Division, Public Works Branch, Washington, D. C., opens bids Sept. 18 for extending and remodeling post office and court house.

**KENTUCKY**—State Highway Comsn., Frankfort, opens bids on Sept. 21 for projects in following counties:

**Bell**—State Project, Pineville-Manchester road, 2.1 miles, grade and drain;

**Grayson**—State Project, Ponia-Hunfordville road, 8.1 miles, low type surfacing;

**Grayson-Breckinridge**—State Project, Falls of Rough-McDaniels road, 7.336 miles, low type surfacing;

**Hopkins**—Flood Relief 24 AG, Nortonville-Greenville road, 4.019 miles, grade and drain;

**Laurel**—State Project 144, London-Bourville road, 7.2 miles, grade and drain;

**Whitley**—State Project 22, Corbin-Cumberland Falls road, 4.9 miles, high type surfacing;

**Whitley**—State Project 712 AS, Williamsburg-Cumberland Falls road, 3.49 miles, high type surfacing.

Mo., St. Louis—City opens bids Sept. 18 for letting No. 4640—improving Carondelet Boulevard, from Weber Road to Morganford Road.

La., New Orleans—U. S. Engr. Office, Second New Orleans Dist., receives bids Sept. 11 for constructing approximately 3,250,000 cu. yds. of earthwork in Second New Orleans Dist.

La., New Orleans—Leo S. Weil and Walter B. Moses, Engr., 427 S. Peters St., receives

bids Sept. 18, advanced date from Sept. 19 for furnishing materials and equipment for installing 700-ton air conditioning system in banking rooms and office space of 14 story Whitney Natl. Bank Bldg., St. Charles and Gravier Sts.; cost \$250,000.

Maryland—United States War Dept., U. S. Engr. Office, 332 Post Office Building, Baltimore, Md., opens bids Sept. 14 to dredge 23,000 to 33,000 cu. yd., in Kent Island Narrows, Chester River; specifications from U. S. Engr. Office.

Maryland—U. S. Engrs., 332 P. O. Bldg., Baltimore, receives bids Sept. 14 for dredging Kent Island Narrows, Chester River, approximately 33,000 cu. yds.

Md., Baltimore—City, H. F. Lucke, Jr., Associate Engr., opens bids Sept. 13 for bridge to replace existing structure over B. & O. R. R. on Edison Highway at Sinclair Lane; estimated cost \$50,000; 58 ft. steel and concrete structure, 106 ft. wide; plain and reinforced concrete, earth excavation, reinforced and structural steel, filling, masonry; plans and specifications from Room 303, Municipal Bldg.

Md., Catonsville—Spring Grove State Hospital opens bids Sept. 14 for auditorium and mechanical equipment, Henry Powell Hopkins, Archt., 10 E. Mulberry St.; James Posey, Mech. Engr., Baltimore Trust Bldg.; Van Rensselaer P. Saxe, Struct. Engr., 100 W. Monument St., all Baltimore.

Md., Hurlock—Comms. of Hurlock, Roland V. Layton, Mayor, receives bids in triplicate until Sept. 11 at their office in the Theatre Building, Main St., for the construction of sewerage system and disposal plant, the work to consist principally of furnishing pipe for sanitary terra cotta sewers, about 4 mi. from 8-inch to 12-inch, with necessary manholes and miscellaneous work; constructing disposal plant consisting of Imhoff tank, sludge bed, and brick and concrete structures, and miscellaneous work; all bids in accordance with Bulletin No. 2 issued by Federal Emergency Administration; J. Spence Howard, Consult. Engr., 20 E. Lexington St., Baltimore, Md.

Miss., Kokomo—Kokomo Line Consolidated School District of Marion and Walthall Counties opens bids Sept. 25 for construction of 1-story, 153x53-ft. brick school; \$22,000; reinforced concrete foundation, wood floors, composition roof, millwork, sheet metal work, plastered interior, glazing, hardware, blackboards, electrical work; new plumbing or heating; E. L. Malvaney, Archt., Jackson.

S. C., Irmo—Board of Trustees, opens bids Sept. 12 for high school; Heyward S. Singley, Archt., Prosperity; 291 x 60 ft., 2 stories, wood, tile and concrete floors, concrete foundations, asbestos or slate roof, brick, cast stone, plasterboard, structural steel; building, \$80,000; furnishings, \$9000.

Tenn., Memphis—City, D. C. Miller, Clerk, opens bids Oct. 9 for construction of John Gaston Hospital, Walter F. Schulz, Archt., 870 Shrine Bldg., Memphis; contract covers following sub-projects: A, erection of temporary frame field hospital; B, razing old hospital buildings; C, erection of John Gaston Hospital, general contract; D, plumbing, sewerage, gas piping; E, sterilizers; F, elec-

trical work and fixtures; G, elevators; H, kitchen equipment; I, refrigeration plant; J, electrical refrigerators; K, heating, ventilating, air conditioning; L, X-ray wiring and equipment; M, laboratory equipment.

Tennessee—TVA, Knoxville, receives bids Oct. 8, for turbines for Norris power plant and Wheeler power plant.

Tex., Dallas—State Highway Comsn., Austin, opens bids Sept. 12 for underpass structure, grading, storm sewers, concrete base course with bituminous filled brick pavement, from Houston St. to Industrial Blvd., extension of Main-Elm-Commerce streets.

Tex., Mission—Hidalgo County Water Control and Improvement Dist. No. 7, E. P. Congdon, Dist. Engr., Mission, has loan and grant of \$557,000 for improvements to irrigation system, laying pipe lines, etc.; plans for work being prepared.

**VIRGINIA**—Dept. of Highways, Richmond, opens bids Sept. 13 for 150-ft. bridge over Rockfish River, Route C-722, at Joblins Ford.

W. Va., Grafton—U. S. Engr. Office, 1506 Keenan Bldg., Pittsburgh, Pa., will probably have plans ready Sept. 15 for bids to be opened about Oct. 15 for Tygart River reservoir dam near Grafton; site of work on Tygart River approximately 2.2 miles above Grafton; dam will be of massive concrete gravity type; crest length of approximately 1830 ft. and a height of 237 ft. above found, rock in the maximum section; spillway section will be approximately 490 ft. long and its crest will be 30 ft. lower than the non-overflow section of the dam.

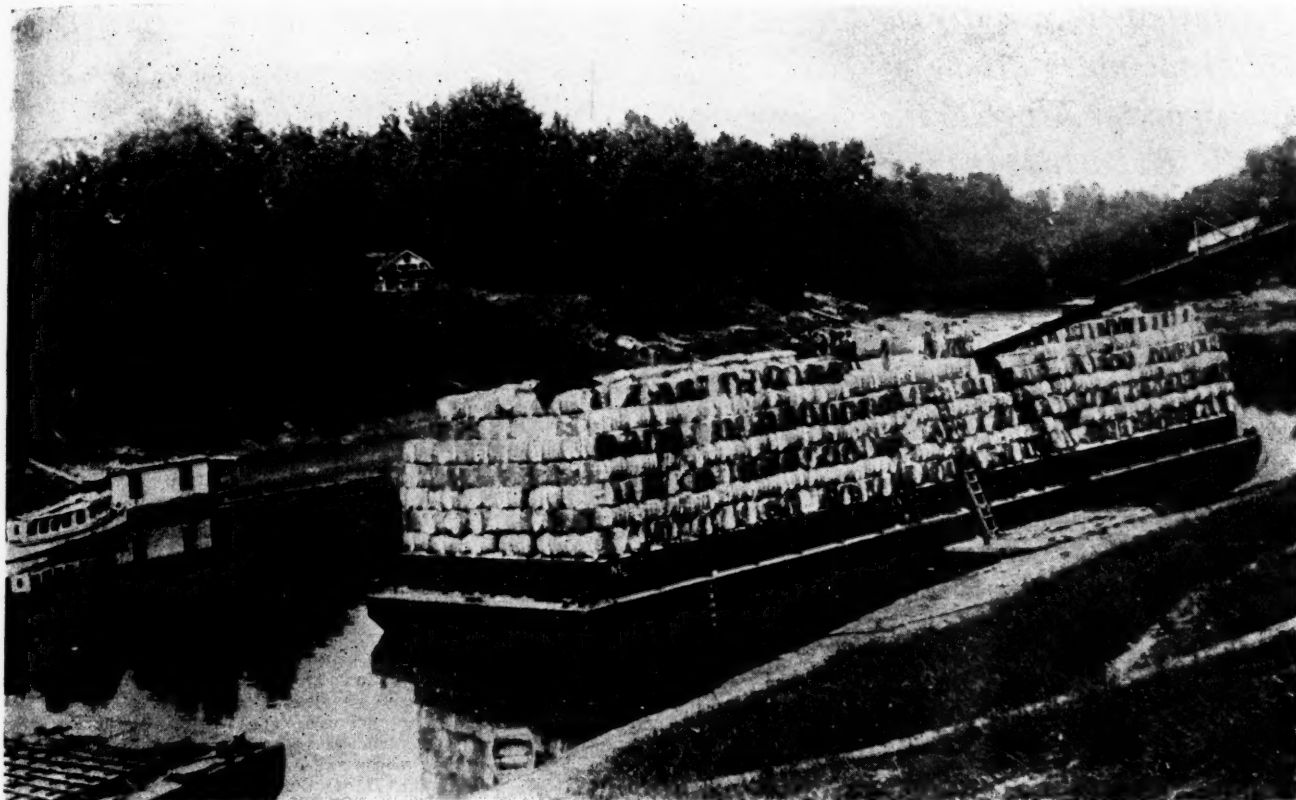
### Contracts Awarded

Arkansas—U. S. Engr. Office, Memphis, Tenn., let following contracts for constructing 19,450 ft. of permeable pile dikes in Mississippi River between Cairo, Ill. and mouth of White River, Ark.; W. Horace Williams Co., New Orleans, at \$75,963, on item 5, \$168,000 for item 6 and \$179,522, for item 7; Chernus Construction Co., Jefferson City, Mo., at \$36,148, item 1 and \$138,040, for item 2; Badgett Construction Co., Memphis, Tenn., at \$82,204 for item 3 and \$62,072 for item 4.

D. C., Washington—The Department of the Interior has awarded contracts for equipment for the heat, light and power plant for Howard University, Bahen & Wright, Inc., Construction Contractors; item No. 7, covering switchboard and electrical installation, Jandous Electrical Equipment Co., 210 E. 40th St., New York, \$53,950; turbo-generators, Industrial Power Equipment Co., 5 E. Center St., Baltimore, Md.; item 5, piping, to Pagenhardt & Co., 2415 Back Hall Road, Washington, \$67,737; item 6, chimney, Alphonse Custodis Chimney Construction Co., 95 Nassau St., New York; the Pagenhardt organization will be awarded item 2 for steam generators, fans and air ducts.

Fla., Miami Beach—O. T. Hennessee, 920 Collins Ave., Miami Beach, has contract for hotel, 36 rooms, Indian Creek Drive, Miami Beach, for Norman S. Castor, 4637 Mulberry St., Philadelphia, Pa.; Charles Paul Nieder, Archt., 714 Safety Deposit Bldg., Miami.

(Continued on page 32)



158' x 35' x 11' Steel Barge of Special Construction designed and built by the American Bridge Company for the American Barge Line Company, "Blocked Off" with a Cargo of 2996 Bales of Cotton for transport from Memphis to New Orleans. This is the largest Cotton Cargo ever loaded on a barge of this size.

## SERVING *the* SHIPPER of COTTON

**T**HE Fleet of the American Barge Line Company, operating on the Ohio and Mississippi rivers, was recently augmented by the construction of twelve new barges of special size and design adapted to the special needs and safety of movement of large quantities of baled cotton by river.

"Serving the Shipper of Cotton" means supplying safety as well as dependability of delivery, conservation of every inch of cargo space, and expeditious movement and complete mobility under any and all channel conditions. Quantity movement calls for scientific operation and *modern* equipment.

To insure exacting supervision and correct construction of every detail entering into the building of these barges, engineers of the American Bridge Company brought to bear the experience gained in more than twenty-eight years of barge-building activity. More than 1500 hulls launched by this yard have included many of unusual size or for very special purposes.

### STEEL BARGES SINCE 1903

*Inquiries are solicited and will be given prompt attention.*

## AMERICAN BRIDGE COMPANY

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

General Office: Frick Building, Pittsburgh, Pennsylvania

Contracting Offices: Baltimore, Boston, Chicago, Cincinnati, Cleveland, Denver, Detroit, Duluth, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, Salt Lake City.

Pacific Coast Distributors: Columbia Steel Company, Russ Building, San Francisco

Export Distributors: United States Steel Products Company, New York



*Selected News Items  
that Indicate Variety of  
Construction Work in the  
South Reported During  
August by Manufacturers  
Record Daily Construction Bulletin.*

## Contracts Awarded

(Continued from page 30)

La. Shreveport—City council authorized Mayor George W. Hardy to award contract for the construction of a municipal incinerator to the A. J. Rife Construction Co., Dallas, Tex., at \$170,180; Carl E. Olschner, Shreveport, Archt.

La., Houma—Treasury Dept. let contract at \$47,717 to Wm. MacDonald Construction Co., St. Louis, Mo., for construction of post office.

Md., Hagerstown—Washington County Hospital Association let contract to J. Henry Miller, Inc., Baltimore, for construction of 150-bed fireproof hospital; plumbing and heating to Herr Brothers, Harrisburg, Pa.; electrical work, A. G. Crunkleton & Co., Greencastle, Pa.; elevator, Otis Elevator Co., brick, dumb waiters, tile and composition floors, incinerator, limestone, marble, metal doors, reinforcing steel, built-up and tile roof, sprinklers, steel sash and trim, structural hollow tile, wire glass; A. T. Klinkhart and Buckler & Fenhagen, associated architects, 325 N. Charles St., Baltimore; Daniel E. Waller, Mech. Engr., 101 Park Ave., New York.

Md., Montgomery County—Montgomery County School Comms. let contracts to Morrison Brothers, Bethesda, Md., for Sandy Spring high and elementary school, \$29,985, for Damascus high and elementary school, \$26,930, and for alterations and additions to Rockville high and elementary school, \$38,250; H. W. Cutler, Archt., James Posey, Mech. Engr., both 1108 16th St., N. W., Washington.

Missouri—U. S. Engr. let following contracts for improvements work Missouri River; Woods Brothers Construction Co., Lincoln, Neb., at \$1,650,410, for pile clump dikes and revetments at Indian Cave Bend to Cottiers Bend, and at \$90,740, for constructing pile dikes in Mississippi River at Liberty; to Morrison-Glasscock-Conner Co., Kansas City, Mo., at \$55,329, for pile clump dikes at Booneville Beach; Addison Miller, Inc., St. Paul, Minn., at \$719,145, for pile clump dikes and revetment at Rulo Bend to Squaw Bend; M. A. Wogan, Kansas City, at \$218,688, for pile clump dikes and revetment Copeland Bend; Bilhorn, Bowers & Peters, Inc., St. Louis, at \$742,670, for crib dikes, pile clump dikes at Copeland and Nebraska Bends; M. A. Wogan, Kansas City, at \$431,723, for pile clump dikes at Civil and Copeland Bends.

Mo., Hannibal—City let contract for bridge over Mississippi River near foot of Rock Street; Union Bridge & Construction Co., 603 B. M. A. Bldg., Kansas City, \$228,438, substructure; Mount Vernon Bridge Co., Mount Vernon, Ohio, \$362,836, superstructure.

Mo., Kennett—Fairbanks-Morse Co., Chicago, Ill., has contract at \$150,773, for power plant equipment, power plant building and electric distribution system for city; Burns & McDonnell Engineering Co., Kansas City, Engrs.

Mo., St. Louis—Selden-Breck Construction Co., Fullerton Bldg., has contract for constructing home for the aged and a convent for Carmelite Sisters of the Divine Heart of Jesus, northwest corner of Manchester Rd. and Woodlawn Ave., Kirkwood; cost \$150,000; 3 stories; fireproof; stone exterior; Maritz, Young & Dusard, Archts.; Sister Cecilia, Mother Superior of the order's convent in St. Charles.

**NORTH CAROLINA**—State Highway and Public Works Comsn., Raleigh, let contracts for projects in following counties:

**Edgecombe**—1304, bituminous surface, 4.37 miles, Route 43 between Route 12 and Pitt county line; Gregory and Chandler Co., Inc., Virgilina, Va., \$14,234;

**Nash**—1621, bituminous surface and structures, 9.81 miles from Nashville, to intersection of Route 95 on Route 58; roadway, R. B. Tyler and Co., Louisville, Ky., \$46,062; structures, Gregory and Chandler Co., Inc., Virgilina, \$18,930;

**Catawba**—6221, underpass and approaches Route 10, Hickory; L. S. Bradshaw, Salisbury, \$30,607;

**Catawba**—6260, bituminous surface, 4.52 miles, Route 96 from Hickory to Moore's ferry bridge; Kiker and Yount, Reidsville, \$15,423;

**Mecklenburg**—6540, grading, crushed stone surface and structures, 4.69 miles, Route 74 between Cabarrus county line and Davidson; roadway, Edwards Brothers, Clinton, \$23,542; structures, Hobbs Peabody Construction Co., Charlotte, \$3,186;

**Rowan**—6996, crushed stone and structures, 7.58 miles, Route 810, from Iredell county line to Barber; George R. Martin, Salisbury, \$53,922;

**Rowan**—6997, concrete widening, Route 80, for .5 in Rockwell; L. S. Bradshaw, Salisbury, \$5,202;

**Union**—6921, underpass on Route 20, in Monroe; F. A. Triplett, Chester, S. C., \$40,510;

**Haywood**—Concrete pavement, .10 mile, Route 284, in Waynesville, L. Riddle & Co., Asheville, \$45,350.

N. C., Greensboro—Angle-Blackford Co., N. C. Bank Bldg., Greensboro, has contract for hosiery mill S. Elm St. for Bogle-Watkins, Inc., cost approximately \$150,000; main building 3 stories; 60x160 ft.; standard industrial type; brick and steel; fireproof; dyehouse, 40x40 ft. and adjoining dyehouse will be boiler room; 30x30 ft.; ground floor of main building will be used as finishing room, second floor for office, shipping and storage, and third floor for knitting.

N. C., North Wilkesboro—Treasury Dept. let contract at \$45,600 to Lundberg-Richter Co., Oceanport, N. J., for erection of post office; reinforced concrete, brick, hollow tile, steel, 1 story and basement.

Okla., Chickasha—Grady County let contract at \$166,826 to D. A. Harmon, Oklahoma City, for construction of court house and jail; at \$12,689 to Southern Prison Co., San Antonio, for jail equipment.

Tenn., Nashville—Monroe Harding Children's Home, W. D. Trabue, Pres., let contract to Foster & Creighton Co., Nashville, for construction of \$50,000 building, 2 stories, Henry C. Hibbs, Archt., Nashville.

Tex., Austin—State Board of Control let contract at \$89,301 to M. H. Ryland, Waverly Ave., San Antonio, for patients' dormitory; fireproof, concrete frame, brick walls, terrazzo floors, tar and gravel roof, concrete on clay foundation; plumbing, heating and wiring to Fox-Schmidt, Austin; wire guards to Southern Ornamental Iron Works, Arlington; Giesecke & Harris, Archts., Enfield-Gracy Bldg., Austin; A. G. Barry, State Building Inspector.

Tex., Arlington—F. A. Mote, Cons. Industrial Bldg., has contract, started work on erecting 78, 4 and 5 room dwellings at Dalworthington Gardens, subsistence project near Arlington on 595 acre site; different floor plans and elevations are provided; concrete footings and piers; rooms will be canvased and papered; pine siding for outside; roofs of shingle; each house to have modern plumbing and a septic tank; garage, poultry house and cow barn will be built as desired by the purchasers; John Nolan and Harry G. Newton, city planners, have charge of laying out project; plans for cottages and outbuildings were designed by H. F. Kuehne; Ralph Bryan, Dallas, will supervise construction; Sam Nesbit, Project Supt.; Samuel Johnson, Building Supt.; E. E. Farrow, Mechanical Contr., Dallas; F. A. Mote, also has contract for 5 houses at Wichita Falls colony, 20 under construction now.

Tex., Brownsville—United States War Department, let contract to Atlantic, Gulf & Pacific Co., 15 Park Row, New York, for dredging 17,490,000 cu. yds. material from Brazos Island Harbor.

Tex., Fort Worth—Harry B. Friedman has contract at \$83,700 for Lily M. Clayton elementary school; steam vacuum heat and temperature control and blumbing, C. Wallace Plumbing Co., \$14,820; electrical work, Goolsby Electric Co., \$4566; Preston M. Geren, Archt.-Engr., Bewley Bldg.; structure to be of reinforced concrete, brick frame, 2 stories; wood, tile, asphalt tile, cement floors, composition and tile roof, reinforced concrete foundation.

Tex., Fort Worth—Fort Worth Independent School District let contract at \$71,140 to Thomas S. Bryne, Inc., Fort Worth National Bank Bldg., for Hubbard school; Dunham differential heating system and plumbing, C. Wallace Plumbing Co., 2224 Summer St., Dallas; electrical work, Eugene Ashe Electric Co., 505 Jones St., Fort Worth; this elementary school will be of brick and reinforced concrete construction, 1 and 2 stories, with concrete, tile and wood floors, reinforced concrete foundation, tile roof; Elmer G. Withers Architectural Co., Inc., Holmes Bldg.; A. E. Van Horn, Engr., Holmes Bldg.

Va., Blacksburg—Virginia Polytechnic Institute let contract at \$164,234 to North-Eastern Construction Co., Winston-Salem, N. C., for construction of faculty dormitory and social center; Carneal, Johnston & Wright, Archts.-Engrs., Richmond.



# The impact strength of this pipe is more than doubled



The experience of users for the past twenty months has confirmed in the field what a long succession of tests has consistently proved, namely, that Super-de Lavaud Pipe is endowed with extraordinary resistance to shocks encountered in handling, transportation and service. The impact strength of this pipe is more than double that of the centrifugal pipe we formerly produced. Users also report pronounced increases in toughness as well as ductility. Tests show more than 50% increase in elongation and

notably greater ductility without loss of tensile or bursting strength. These important advantages are the result of a new technique in the centrifugal casting of gray iron, developed and patented by this company, whereby Super-de Lavaud Pipe is *cast without a chill in metal mold*. A booklet, available on request, gives complete data.

UNITED STATES PIPE AND FOUNDRY CO.  
BURLINGTON, N. J.

Foundries and Sales Offices throughout the United States

## U.S. SUPER-DE LAVAUD PIPE

IMPACT RESISTANCE INCREASED MORE THAN 100%

SEPTEMBER NINETEEN THIRTY-FOUR

# IRON, STEEL AND METAL MARKET

**A**NNOUNCEMENT by the Ford Motor Company of intention to build a \$12,000,000 steel mill to furnish its own steel requirements, and the reported merger of three steel companies involving assets of \$323,000,000 were the most important features of the month in the steel industry. Subject to ratification by stockholders, the Republic Steel Corporation, the third largest in the industry, will be merged with the Corrigan-McKinney Steel Company and in turn take in the Truscon Steel Company. A special meeting of Republic stockholders has been called for October 30 to vote on the proposed merger. This will give the new consolidation a combined steel ingot producing capacity of 6,000,000 tons annually, and the combined enterprise will own large reserves of iron ore, coal, and limestone. Republic's plans contemplate readjustment of the corporation, capital structure and \$24,000,000 of new financing. Fixed properties of Corrigan-McKinney and its subsidiaries as of June 30 are valued at approximately \$51,000,000 and those of Truscon at \$8,000,000.

## Steel Consumption Rate Higher Than Production

Mid-summer dullness was pronounced in the steel industry during August. At the end of the month, the operating rate was down to 19.1 per cent of capacity as compared with 21.3 per cent the week previously and 26.1 per cent, one month ago. The operating rate in the Birmingham district was much better than the national average, running between 25 and 30 per cent at the close of August. Despite curtailed output, there are evidences that consumption of steel is at a higher rate than present production. Steel jobbers' sales in August were much larger than in July. It is reasonable to expect that as the consumption of iron and steel was relatively better than the production record, September steel operations will show improvement.

Government requirements continued to provide most of the demand for steel but steel makers see little immediate prospects for increased steel demand in additional government work because it will take several months before plans can be translated into actual work operations and increased steel production. Hope for revival of automobile activity has not been realized as yet. As it has been

eight or nine weeks since general consumers stocked up with steel, the anticipated increase in demand probably will develop this month. Small orders for steel have begun to show improvement.

## Structural Steel Sales

The mid-summer slump in bookings of structural steel for fabrication reversed the improved trend of new business which had been recorded during the first half of 1934. July shipments, according to reports of the American Institute of Steel Construction, were approximately 59 per cent larger than for the same months last year. Reports from 80 per cent of the industry indicate that the bookings during July however were about 29 per cent less than the average monthly bookings during the previous six months, and 1 per cent less than for July, 1933. Since June there has been a corresponding absorption of tonnage on the books. Tonnage available for future fabrication now is approximately 7 per cent larger than at this time last year.

Wholesale hardware sales increased about 40 per cent for the first six months of 1934 with the best record of sales being made by the South during the summer. With cotton and tobacco bringing good prices and the general improved conditions in the South, this section should continue to offer a good market for steel products.

Resumption of operations at the Gadsden mills of the Gulf States Steel Company the latter part of August was encouraging even if demand did not justify their reopening. The employees wanted work and the company set a fine example in showing a willingness to cooperate with labor as far as possible by providing employment at this time.

The Pullman Car & Foundry Company at Bessemer is expected to begin the building of 1000 cars, spreading the work over the next few months.

Four of the larger open hearth furnaces at the Fairfield works of the Tennessee Coal, Iron and Railroad Company are in steady operation.

The unsatisfactory outlook for the steel industry was reflected in the 10 per cent salary reduction reported by the United States Steel Corporation and other companies and the elimination of Saturday work for all salaried employees.

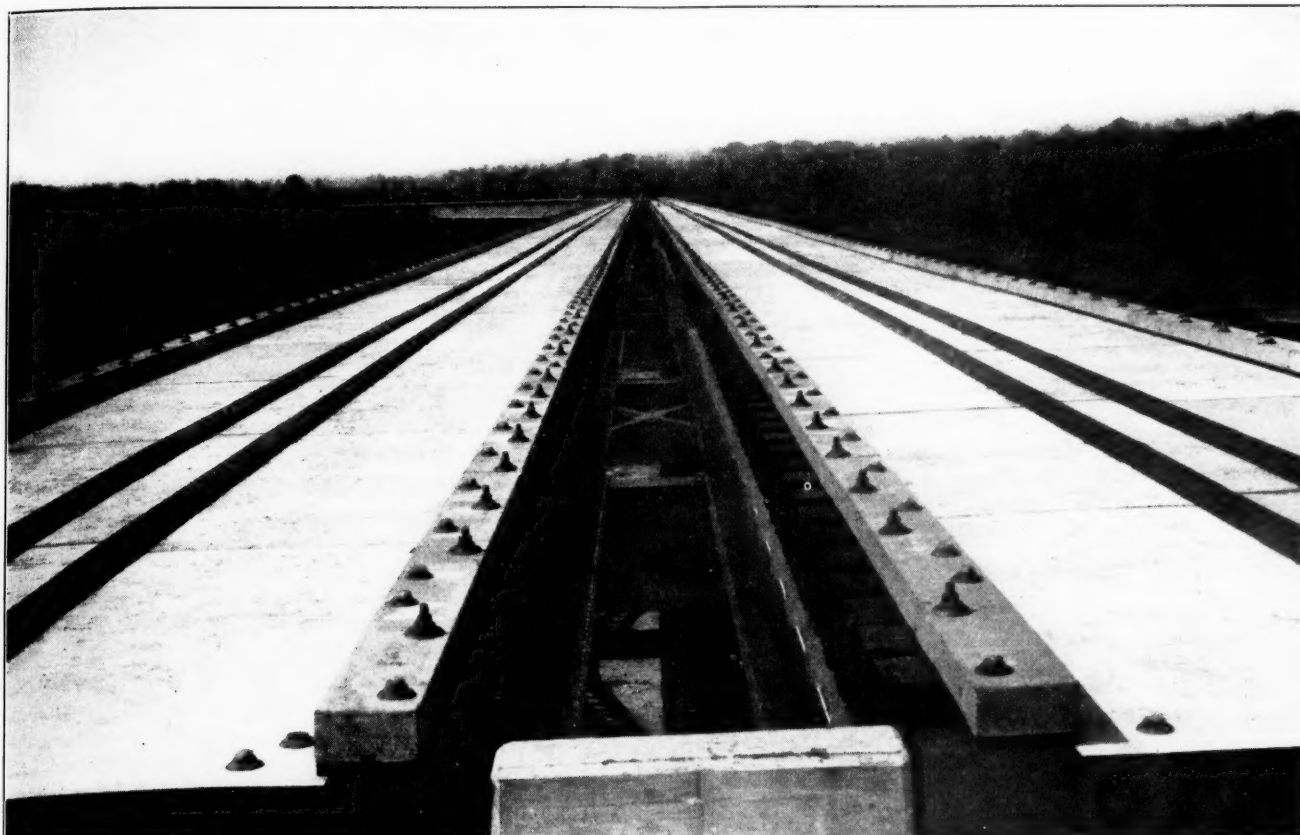
As previously announced by the Steel Corporation, a general advance in wage rates and including the lesser salaried employees, was made on April 1, 1934, throughout the entire steel industry. This increase extended to the subsidiaries of the Corporation other than the transportation companies, and increased the average earnings per hour for all employees from 65.5 cents to 71.2 cents, or 8.7 per cent. This increase in rates of pay on basis of aggregate employment in the quarter ending June 30, 1934, resulted in an added payroll disbursement for the quarter of approximately \$5,200,000. The total payroll for the June quarter was \$65,094,000 compared with \$33,468,000 for the corresponding quarter in 1933. In the June quarter employment was given to approximately 200,000 employees. Production of finished steel products averaged 48 per cent of capacity compared with 29 per cent in the previous quarter.

It is pointed out that during the past three years the Corporation has expended relatively small amounts for modernization and betterment of plants. The condition of a number of the finishing plants demand that rather extensive alterations be made to secure greater efficiency in cost of production and to meet the requirements of the trade as to quality of product. Accordingly, the Corporation has recently authorized betterments to plants in the Chicago and Youngstown districts calling for the expenditure of substantial amounts. Plans are also under consideration for additional work of modernization and betterments at certain other plants.

## Pig Iron Production

Pig iron output of the United States for the first six months of this year was double that of the corresponding period of 1933. Production of pig iron and ferro-alloys amounted to 9,926,000 tons, the largest half-yearly production since the first half of 1931, reports the American Iron and Steel Institute.

On the 275 blast furnaces in the United States, 98 were in operation on June 30, 1934, as compared with 91 on the same date last year and on December 31, 1933. Of the total output, 9,669,000 tons represented pig iron and 257,000 ferro-alloys. There were 12 blast furnaces which were making ferro-alloys only or ferro-alloys and pig iron.



*Rail approach at eastern end of Mississippi River Bridge, New Orleans, showing Beth-Cu-Loy Sheets in place, before rails were laid. Airplane view of bridge from east side of river and showing rail approach appears below.*

## Sheets of Beth-Cu-Loy Serve Double Purpose on New Mississippi Span

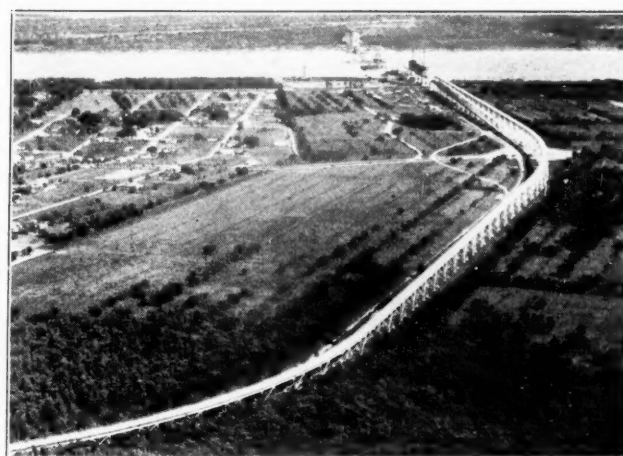
**Used on Rail Approaches, They Protect Ties from Sparks and Steel Structure from Brine Drippings**

This unusual installation of Beth-Cu-Loy Sheets on both the eastern and western rail approaches of the new Mississippi River Bridge at New Orleans serves two purposes.

Laid over the ties, the sheets protect them from the sparks from passing locomotives. And they protect the steel-supporting structure from the corrosive action of brine drippings from the many refrigerator cars that cross the bridge on their way east. A total of 450 tons of Beth-Cu-Loy Sheets, 18 gauge, were used.

Beth-Cu-Loy Sheets combine low cost with high rust-resistance. Engineers are more and more specifying them for all types of applications involving exposure to the weather and other corrosive conditions.

Sheets of Beth-Cu-Loy cost only a trifle more than ordinary steel sheets, yet outlast them from 2 to 2½ times. Beth-Cu-Loy Sheets have the composition (copper-bearing steel) that in comparative tests made by the American Society for Testing Materials estab-



lished itself as definitely superior in rust-resistance to other steels and irons in common commercial use—and some of which are far more costly.

### **BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.**

*District Offices:* Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Houston, Indianapolis, Milwaukee, New York, Philadelphia, Pittsburgh, St. Louis, St. Paul, Washington, Wilkes-Barre, York. *Pacific Coast Distributor:* Pacific Coast Steel Corporation, San Francisco, Seattle, Los Angeles, Portland and Honolulu. *Export Distributor:* Bethlehem Steel Export Corporation, New York.





# GOOD ROADS AND MOTOR TRANSPORT

## \$71,000,000 From Motor Registration Fees in South

State motor vehicle registration and license fees in the South last year amounted to \$71,042,000. Of the total receipts, approximately \$44,298,000 was devoted to construction and maintenance of State highways and local roads, and \$17,506,000 was used for payment of highway bond obligations. Included in the expenditures for road construction was \$906,000 for city streets in Maryland, \$169,000 in Oklahoma and \$540,000 for Washington, \$75,000 being for street signals.

The remainder of the motor vehicle revenue was largely made up of the \$4,599,000 which Florida diverted to its county school fund; expenses of collection and administration, and State highway patrols in North Carolina, South Carolina and Tennessee.

## Virginia May Build More Concrete Roads

Completing a trip of inspection of roads in Maryland, Pennsylvania, New York and West Virginia, State Highway Commissioner Shirley and Chief Engineer Mullen, of the State Highway Department, are studying the possibility of putting more emphasis on the construction of concrete roads in Virginia and treating secondary roads with calcium chloride to lay dust. Except for some unusually good concrete roads which have been reinforced, Mr. Shirley states that Virginia roads compare well with roads in other States. He also commented on calcium treated roads which were built of good gravel, drilled with calcium chloride and topped with stone chips and sand. These, he said, had smooth top surfaces and remain in good condition, while built at small cost.

## Meeting of Highway Research Board

The fourteenth annual meeting of the Highway Research Board, Roy W. Crum, Director, 2101 Constitution Avenue, Washington, D. C., will be held in the building of the National Academy of Sciences and National Research Council December 6-7.

## Heavy Duty Crawler Tractor

The Trackson Company, Milwaukee, Wis., has put in production the Model GL Trackson-Case Crawler Tractor, powered by the Model L Case motor, developing about 40 drawbar horsepower. The weight of the tractor is 8000 pounds, the ratio of power to weight being designed to meet the demand for maximum power with minimum weight. Track area in contact with the ground is unusually large, and as the tractor is designed to work with super-imposed auxiliary equipment, it has a low center of gravity, wide tread and special balance to provide the best stability with front, rear and side loads. Crawlers have extra large load supporting bearing area, great structural strength and provisions for proper inbuilding of equipment, such as booms, cranes, hoists, etc. Single drive lugs form a rail upon which the front and rear crawler wheels run, the front wheels being of the sheave type, while the rear wheels have drive teeth independent of guide flanges. This design assures positive action, proper alignment under all operating conditions and provides maximum load carrying capacity.

MOTOR VEHICLE RECEIPTS AND DISBURSEMENTS, 1933

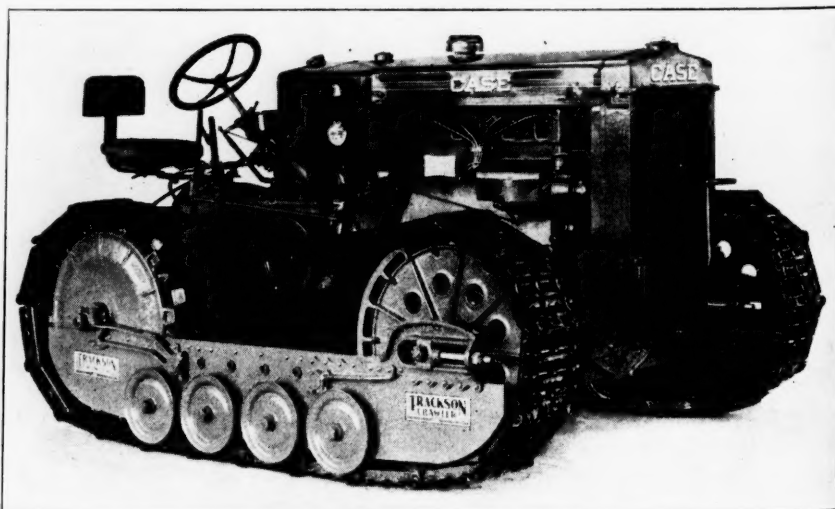
States	Total Revenue*	Disposition of Receipts	
		Road Construction, Maintenance	For Bond Payments
Alabama	\$2,724,000	\$1,519,000	\$1,064,000
Arkansas	1,769,000	1,069,000	623,000
District of Columbia	625,000	540,000	.....
Florida	4,995,000	(\$4,599,000 diverted to county school fund)	
Georgia	1,036,000	899,000	.....
Kentucky	1,176,000	3,938,000	.....
Louisiana	1,053,000	3,602,000	320,000
Maryland	3,581,000	3,022,000	.....
Mississippi	1,870,000	1,771,000	.....
Missouri	9,357,000	1,591,000	7,435,000
North Carolina	5,356,000	2,442,000	2,677,000
Oklahoma	3,382,000	3,205,000	.....
South Carolina	2,503,000	437,000	1,698,000
Tennessee	2,940,000	2,673,000	.....
Texas	12,747,000	12,115,000	.....
Virginia	6,090,000	5,475,000	.....
West Virginia	3,838,000	.....	3,689,000
Total South	\$71,042,000	\$44,298,000	\$17,506,000
United States	\$302,694,000	\$192,876,000	\$42,378,000

\*Includes registration fees of passenger cars, trucks, tractors, trailers and motorcycles and miscellaneous receipts of dealers' licenses, operators' permits, certificates of title, etc.  
†Covers 10 months' period due to change in registration year.

## American Road Builders' Convention

The American Road Builders' Association, Washington, D. C., will hold its 1935 convention and highway exhibit in that city January 8-11, inclusive, with convention headquarters at the Willard Hotel, according to Captain H. C. Whitehurst, president of the Association and Director of Highways of the District of Columbia. The theme of the convention will be an adequate highway program based upon securing financial aid through Federal and State sources, giving especial attention to the use of highway revenues for highway purposes and principally the non-diversion of gasoline taxes and motor license revenues for purposes other than highway construction and maintenance.

Model GL Trackson-Case Tractor



# LIMAS

*for*

**WAUGH BROS.**

**INCORPORATED**

**FAYETTEVILLE, W. Va.**

**and CULPEPER, Va.**

**"CATERPILLAR" DIESELS**

**T**WO more LIMA "Caterpillar" Diesel shovels on the way to the Shenandoah National Park, Virginia, where they will do their part in building Virginia's scenic Skyline Highway.

This project includes some of the toughest excavating that can be found anywhere and it was important for Waugh Brothers, Inc., Fayetteville, West Virginia, to find a machine that would handle the hard blue granite at the lowest possible cost per yard.

After carefully investigating various makes of shovels from crawler pads to boom point sheaves their choice was two LIMA 601 "Caterpillar" Diesels. Their keen judgment in the selection of LIMA equipment has resulted in a new conception of low cost excavating.

**THE OHIO POWER SHOVEL CO.**

DIVISION LIMA LOCOMOTIVE WORKS, INCORPORATED

HOME OFFICE LIMA, OHIO, U. S. A. FACTORY

NEW YORK  
167th Street and Sedgwick  
Avenue

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1543 Straus Bldg.

NEWARK, N. J.  
317 Frelinghuysen  
Avenue

SEATTLE  
9244 First Ave. So.

MEMPHIS  
77 McCall Street

DALLAS  
1301 So. Lamar St.

The General Supply Co. of  
Canada, Ltd.  
Ottawa, Ont.

Tyee Machinery Company,  
Ltd.  
Vancouver, B. C.



# LIMA

**DRAGLINES  
SHOVELS  
CRANES  
BACKDIGGERS**

# EQUIPMENT

## NEW AND IMPROVED

### Grinding Wheel of Crushed Diamonds

The Carborundum Company, Niagara Falls, N. Y., announces through its Research Laboratories a sensational new wheel made from genuine, crushed South African diamonds—a wheel that through exhaustive tests has shown startling results in grinding hard cemented carbides. On pure cemented carbides, the wheel is declared to be approximately thirteen times faster cutting—removes thirteen times more stock per minute than previous specially developed abrasive wheels.

### Portable Rotary Pumping Unit

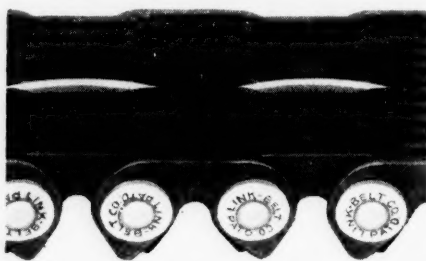
The De Laval Steam Turbine Company, Trenton, N. J., has developed a high speed rotary displacement pump which has made possible a compact and comparatively light weight gasoline engine driven unit mounted on a trailer. The pump is known as the DeLaval-Two pump and weighs only 398 pounds. Driven at approximately 1675 r.p.m. by a 60 hp. gasoline engine, it delivers 90 gallons per minute against 495 pounds pressure per square inch, with a suction lift equivalent to 14 inches of mercury. The pump has only three working parts, a central power rotor and two sealing rotors, which mesh in such manner that the liquid is carried through, as by continuously acting piston, without shock or pulsation. There are no timing gears or separate bearings, and but one stuffing box which is subjected to suction pressure only. Rotating parts are in complete rotational balance and in hydraulic balance axially.

Gasoline Engine Driven Rotary Pump in Service



### Silverstreak Silent Chain

The Link-Belt Company, Chicago, Ill., announces that it has given a "new dress" to a 32-year-old product—the Link-Belt Silent Chain Drive—by bluing most of the chain and treating the washers and guide bars to give them a silvered appearance. Silverstreak, the trade name, has been adopted as a fitting designation, as when the drive is in operation the motion of the chain describes a silvery streak. It is made in all standard types, for both industrial first reduction drives and automotive



Link-Belt "Silverstreak"

silent timing; viz., Side Flanged, Middle Guide, No Back Bend, and Duplex types. Silverstreak silent chain follows rather closely the announcement of Link-Belt Silverlink Roller Chain.

### Controlled Insulating Fire Brick

A. P. Green Fire Brick Company, Mexico, Mo., announces the G-25, their new Controlled Insulating Fire Brick, into which the company has "burned all its scientific knowledge." These brick, representing an entirely different field, are manufactured under a special patented process.

### Type "Y" Air Compressors

Type "Y" Westinghouse Air Compressors, designed to meet the need for an efficient, reliable and economical source of compressed air for small shops, garages, road machinery, etc., is announced by Westinghouse Air Brake Company, Wilmerding, Pa. The compressor is manufactured in sizes ranging from 4 to 31-cubic foot displacement and in various types for varied purposes. For fixed installation, legs are used for tank mounting; casters for portable use, and bed plate mounting for floor or sill in stallations. A flywheel is available for direct drive by any kind of take-off. Two-stage compression is employed for pressures from 10 to 200 pounds and single stage for pressure below 100 pounds.

### Goodrich Hot Material Belt

Employing the same principles of heat resistance used in "Golden Ply" tires, engineers of The B. F. Goodrich Company, Akron, Ohio, have developed a conveyor belt known as the Golden Ply Hot Material Belt. Not only is the flexing life of the new construction in its original state declared to be 85 per cent greater, but the belt cover is so constructed as to offer great resistance to abrasion even after prolonged exposure to heat. An outstanding fact disclosed by laboratory tests is that, whereas the flexing life of usually hot material belting has been reduced about 15 per cent by normal aging tests, the new belt, it is said, actually registers a 31 per cent increase in flexing life after aging.

### Fedders Series 3 Unit Heaters

The Fedders Manufacturing Company, Buffalo, N. Y., announces Series 3 line of Unit Heaters with important improvements in design, quietness and appearance to meet requirements of commercial as well as industrial applications. E. R. Walker, Heating Division Sales Manager of the company, points out that these new heaters are built primarily from the viewpoint of the man in the field. For commercial installations, Fedders cabinets are designed to harmonize with the simplicity of modern architectural practice, and are finished in pleasing dark brown morocco-like texture which is durable and resistant to abrasion. Cabinets are sturdy and electrically welded, while special attention has been given to the factor of quietness.



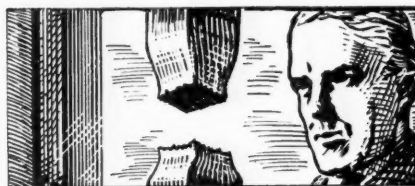
# A Tower of Torture for Wire Rope



**FOR YOUR PROTECTION:** To make certain that Roebling Wire Rope will give the user the highest obtainable degree of safe, economical service, Roebling has left no stone unturned. It has enlisted the aid of the finest and most complete research, testing and manufacturing facilities. This testing machine is an example. John A. Roebling's Sons Company, Trenton, N.J. Branches in Principal Cities.

## ONE OF THE WORLD'S LARGEST PRECISION TESTING MACHINES

This giant testing machine has a capacity of 2½ million pounds, is 43 feet high, and weighs 138 tons. Routine specification tests of Roebling Rope are made on this and other Roebling testing machines which range in size down to 200 pounds capacity.



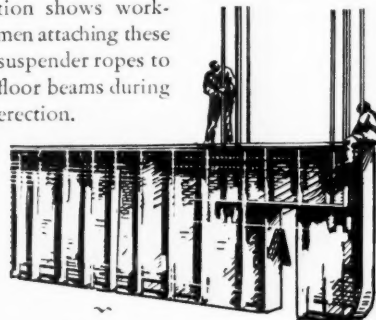
**CAN PULL APART  
6" SQUARE  
STEEL BAR**



**CAN CRUSH  
CAST IRON COLUMN  
15' LONG, 15" DIAM.,  
WITH 1½" WALLS**

## CAPABLE OF TESTING LARGEST ROPES MADE

It was first used for tension testing the huge 27½ inch Roebling Suspender Ropes for the George Washington Memorial Bridge, between New York and New Jersey. Illustration shows workmen attaching these suspender ropes to floor beams during erection.



# ROEBLING

## ...THE PACEMAKER IN WIRE ROPE DEVELOPMENT

SEPTEMBER NINETEEN THIRTY-FOUR

# As Autumn Begins

Business is showing definite signs of improvement. Prosperous agriculture means prosperous industry.

*Can we be of Service?*

## Baltimore Commercial Bank

GWYNN CROWTHER, President

Baltimore, Maryland

*Member Federal Reserve System*

## Electric Bond and Share Company

Two Rector Street  
New York

## FINANCIAL NEWS

### Housing Loans

While no figures are available of the total amount of money so far advanced by the lending agencies of the country for home repairs and improvement under the National Housing Act, it is reported that the banks of the country in the main stand ready to facilitate the purpose of the Act in every reasonable way. Reports from a number of sources indicate that a considerable part of the applications have been from those who could not meet the credit requirements but their showing on the whole is said to be encouraging.

While there is considerable detail attached to the handling of small loans of this character to be paid in monthly installments, there is no doubt the banks, crowded with surplus funds are glad of the opportunity for an outlet where the money can be used to assist worthy people.

Information as to the number of loans and their total will be interesting.

### Rights of Investors

The Massachusetts Department of Public Utilities does not look with favor upon the propaganda which has been widespread decrying public utility rates. At least not all public utilities are regarded as gougers who ought to have their income cut down. This New England Commission dismissed applications for rate reductions aimed at the New England Telephone Company. They based this decision on the right to a fair return.

In Massachusetts it seems that utilities must sell their stock at not less than par and the Commission held that the rate reduction asked for was not justified in view of the fact that the company would be unable to pay dividends sufficient to maintain its stock at par if this was done.

There has been witnessed recently what some describe as "a crusade of persecution in regulatory activities against public utilities."

### Maryland State Bonds

Maryland has reason to congratulate itself on the recent sale of \$2,350,000 four per cent State bonds at \$109,979, which brings the interest rate down to 2.81 per cent. This evidence of the confidence in the State's financial position is exceedingly gratifying to citizens and State authorities alike.

The inability of capital to find lucrative channels for investment has brought unusually high offers for public securities which are well regarded.

### Security Registrations

Security registrations filed with the Federal Trade Commission and that have become effective since the Securities Act went into effect in July 1933, numbered 713 as of the close of the fiscal year, June 30, 1934. The issues involved a total of \$962,856,000.

### Auto Financing

The Commerce Department says the value of new automobile financing for the first seven months of the calendar year increased 72 per cent over the same period of 1933, while factory sales for these seven months totaled 1,980,914 units. This was an increase of 761,000 cars over the same 1933 period.

*(Continued on page 42)*

IF your business has to do with the Richmond territory, consider the value of a banking connection with an institution which has served an appreciable portion of the business of the Old Dominion since 1865, and has done so in every way consistent with



conservative management and sound banking principles.

## FIRST AND MERCHANTS National Bank of Richmond

JOHN M. MILLER, JR., President



## 60,000 HOLDERS DEPOSITED OVER \$140,000,000 OF DEBENTURES

A MAJORITY of holders have deposited more than half of the amount of outstanding debentures of the Associated Gas and Electric Company under the Plan of Rearrangement of Debt Capitalization.

Annual interest savings of \$2,758,383 have resulted from the Plan, based on deposits made by May 31, 1934.

These substantial savings may be insufficient unless business improvement continues, to prevent a deficit, on a consolidated basis, for fixed interest on the debentures of the Company during 1934, because of rate reductions and increased outlays for taxes, labor and materials.

Holders of Company fixed interest debentures by depositing in exchange for Associated Gas and Electric Corporation debentures under the Plan, protect their own interests and help make successful a readily available means of insurance against future adverse conditions.



**Associated Gas and Electric Securities Company, Incorporated**  
61 BROADWAY NEW YORK



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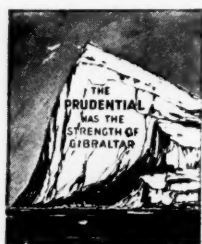
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# They want more GROUP INSURANCE

Many establishments which have taken group insurance have later increased the amounts. Employees gladly contribute for the revised benefits—enlightening testimony from those who know.

*Further facts available  
to interested employers.*



THE PRUDENTIAL  
INSURANCE COMPANY OF AMERICA

EDWARD D. DUFFIELD, President  
HOME OFFICE, NEWARK, N. J.

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## Financial News

(Continued from page 40)

### Credit Necessary to Recovery

A. H. Giannini, the California banker, is quoted as saying:

"A shrewd and daring search for sound credit openings by our credit agencies, and the ready extension of credit wherever and whenever these openings are found, are more essential to a recovery program, to the restoration of the morale of business and to the salvage of our economic institutions of free initiative than any other service which may rationally be demanded of us."

### Member Bank Deposits

Member banks of the Federal Reserve System reported an increase of \$4,400,000,000 in deposits during the fiscal year ending June 30. Their investments in government issues increased about \$2,209,000,000 during the year, while commercial loans declined \$375,000,000. It is estimated that about 60 per cent of government bond issues are now held in banking portfolios.

### B. & L. Association 100 Years Old

The U. S. Building & Loan League calls attention to the fact that in 1834 the Oxford Provident Building Association of Philadelphia County, earliest institution of its type in America, dispersed \$125 to a village lamplighter to build an extra room on his house. The building still stands at 4276 Orchard Street, Philadelphia. The house had been bought with a loan from the building and loan association and was the first home in the country to be so financed.

### Misgivings

In talking about the huge sums of money being advanced by government for various objectives, the opinion has been expressed in different quarters that the country, before long, would hear increasing appeals from borrowers to be relieved of their burden of debt. This idea has been stated somewhat as follows: "Aspirants for public office in the near future will run on platforms that advocate cancellation of debt due government. One of the arguments will be that we have not been able to collect the huge sums due us by foreign countries, sums for which the American people have had to bear the burden. Why should we ask our own people, already weighted down with unbearable obligations, to meet a debt that will take the rest of their lives to pay? Bankrupt municipalities can hardly hope to pay in this and the next generation the money they owe to government."

All of this is an unpleasant thought and accounts in part for the increasing fear of inflation.

### RFC Loans to Industry

Industries seeking direct Government loans through the RFC and Federal Reserve Banks have received about \$15,000,000 up to September 1st. Applications aggregating \$100,000,000 have been approved so far by the RFC. Slow in starting, applications through the local agencies of the RFC are beginning to be received in Washington in greater number.

General RFC loans under the "repayable" classification which have been made since it was established by Mr. Hoover amount to \$4,200,000,000. About \$1,700,000,000 or 42 per cent have been paid back with \$2,400,000,000 still outstanding.

MANUFACTURERS RECORD FOR

## — NATURAL GAS —

ARE THE QUESTIONS

of

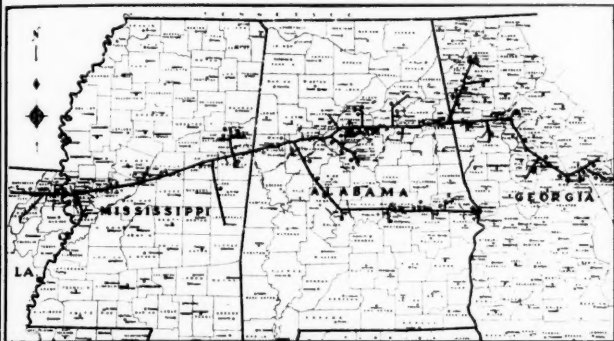
RELIABLE AND CHEAP POWER

of importance to you in your Manufacturing Plant?

If so, you should at once investigate the advisability of installing

**NATURAL GAS ENGINES**

Ice Plants, Cotton Gins and Machine Shops situated along the lines of Southern Natural Gas Corporation are rapidly adopting this source of power.



**Southern Natural Gas Corporation**

Watts Building  
Birmingham, Alabama

**Complete**

PHOTO-ENGRAVING FACILITIES  
DESIGNING-RETOUCHING-PLATE MAKING  
• ILLUSTRATING •

ALABAMA ENGRAVING COMPANY • Birmingham, Ala.  
121 AVE. AT 22ND STREET P. O. BOX 1072

Georgia, South Carolina, Tennessee and Alabama

STATE AND MUNICIPAL BONDS.

**The Robinson-Humphrey Co.**

Walnut 0316

Atlanta, Ga.

# FARQUHAR

**Makes Big Money for Sawmill Operators**

For three-quarters of a century Farquhar Sawmills, powered by Farquhar Steam Rigs, have provided EASY, ECONOMICAL, TROUBLE-FREE OPERATION and SURE PROFITS. Write TODAY and Get the New FARQUHAR SAWMILL CATALOG . . . A wealth of valuable information for the sawmill operator —EASY TIME PAYMENTS. Farquhar Distributors in your territory carry new and used machinery. Repairs and supplies.



**A.B. FARQUHAR CO., Limited, Box 6M, York, Pa.**

# SAWMILLS



Trade Mark Registered

**ACI** producers and their Sub-Agents offer the largest assortment of quality coals in the world, suitable for all industrial, by-product, metallurgical and gas producer purposes. A list of producers and agents will be furnished on request.

**Appalachian Coals, Incorporated**

Transportation Bldg.

Cincinnati

**THE OSCAR T. SMITH & SON CO.**

*Manufacturing*

**BANK AND COMMERCIAL STATIONERS**

407-9-11 E. Saratoga Street  
BALTIMORE, MD.

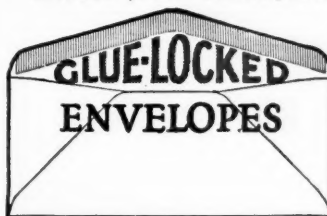
CHARACTER

QUALITY

—SERVICE—

# ENVELOPES

*Direct from Manufacturer to Consumer*



PLAIN and

PRINTED

All Sizes

and Styles

**OLES ENVELOPE CORP.**

Montebello Ave. near 25th St., Baltimore, Md.  
Sales Offices, Washington, D. C., Philadelphia, Pa., Newark, N. J.

## RADIO ENTERTAINMENT

as you like it!

*Good News!*

ARMCO returns SEPT. 30 in another brilliant series of radio broadcasts over the NBC Red Network—26 stations in all, featuring the celebrated ARMCO BAND directed by Frank Simon, one of America's greatest bandmasters, and that perennial favorite of the air waves, the Iron-master, in a series of friendly topical talks about iron and steel, "the master of them all". Tune in for these popular Sunday Night broadcasts at 6:30 P. M., Eastern Standard Time. And remember that Armco makes 307 different grades of special iron and steel sheets, including Armco INGOT

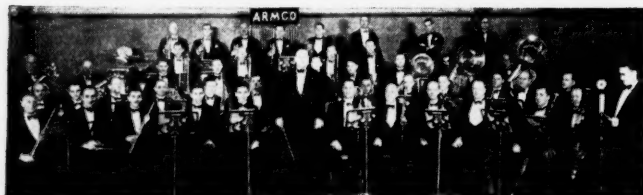


IRON and Armco STAINLESS STEEL—a grade for your every exacting purpose.

**THE AMERICAN ROLLING MILL COMPANY**

Executive Offices

Middletown, Ohio



## ARE YOU AWARE THAT

**CONSTRUCTION** needs of the United States are estimated at \$30,000,000,000.

**BUILDINGS IN NEED OF REPAIRS** number 13,000,000 at least 3,500,000 of which require major improvements to make them safe and habitable. In addition there is an enormous number of homes in need of modernization. It is estimated that during the past five years the shortage of new homes has grown to 1,000,000.

**LONGLEAF AND SLASH PINE FORESTS** of the Southeast have produced about two-thirds of the world's supply of turpentine and rosin. The industry contributes the principal revenue of many millions of acres of Southern forest lands, and furnished a means of livelihood to a considerable proportion of the agricultural population in these areas.

**ALABAMA COAL INTERESTS** estimate that completion of the TVA hydro electric program will destroy the market for 3,250,000 tons of coal and throw out of employment 7,000 miners in the Southeast.

**TVA** has been paying from \$25 to \$40 an acre to owners of Tennessee River land which will be inundated as a result of the building of the power dams. Owners are permitted to move all buildings and they will probably have the opportunity to make two more crops before the lands are taken over.

**CHEWING AND SMOKING TOBACCO AND SNUFF ARE** made in 111 establishments which had an output of \$131,925,000 in 1933. They spent \$83,040,000 for materials, containers, fuel and purchased current. The industry is largely centered in the South.

**STOCK FIRE INSURANCE COMPANIES** have invested \$402,694,000 in industrial stocks and bonds; \$467,902,000 in stocks and bonds of steam railroads; \$363,882,000 in securities of electric, gas and water companies; \$65,803,000 in mortgage and realty loans; \$250,472,000 in stocks and bonds of trust companies, and have cash in banks of \$124,940,000.

**BOOT, SHOE AND SLIPPER** production in the United States numbered 187,972,000 pairs for the first half of this year, a gain in output of 8 per cent over the corresponding period of 1933.

**RAILROADS LACKED** \$140,000,000 of revenue sufficient to pay their fixed charges in 1932. The deficit was reduced to \$13,800,000 in 1933. Restoration of basic pay of employees decreed by the Government will add \$156,000,000 to railroad costs, the pension law enacted by Congress will add \$66,000,000 and the increased costs of materials caused by the operations of the NRA will add \$137,000,000, or a total of \$359,000,000, an increase of more than 15 per cent, over the gross operating expenses of 1933.

**FLORIDA** has 250,000 acres suitable for the propagation of tung trees which would give it tung oil resources used in the paint manufacturing industry sufficient to employ 50,000 persons and supply a \$60,000,000 market.

**FOREST INDUSTRIES** in four Southern States gave employment to 67,000 persons, paid \$60,000,000 in salaries and wages and produced manufactured products valued at \$202,000,000, according to the last general census.

MANUFACTURERS RECORD FOR



**COTTON ACREAGE** has increased in China, Egypt and Mexico and is expected to be larger in India and Brazil. China reported 6,747,000 acres for 1934-35, a gain of 605,000 acres over the previous season and 1,100,000 acres more than in 1932-33.

**AIRPLANES** manufactured in the United States during the first half of this year numbered 748, of which 374 were for domestic civil use, 264 for military use and 110 for export.

**AUTOMOBILE REGISTRATIONS** throughout the world number 33,330,000 of which 23,827,000, or about 72 per cent, are in the United States including 5,940,000 in the South.

**FOREIGN BONDS** in partial or complete default amount to about \$2,500,000,000, representing several hundred issues from 23 countries.

**FEDERAL JOBHOLDERS** number in excess of 661,000, the largest in peacetime history. Payrolls have increased by \$100,000,000 a year.

**COTTON CONSUMPTION** throughout the world amounted to 25,106,000 bales for the year ending July 31 as compared with 24,640,000 bales in 1933, 23,007,000 bales in 1932 and 25,803,000 bales in 1929. World consumption of American cotton declined 841,000 bales while world consumption of cotton produced in other countries increased 1,307,000 bales.

**MUNICIPAL GOVERNMENTS** of 442 American cities are now directed by city managers.

**LOANS TO FARMERS** during the past year by the Federal Land Banks and Land Bank Commissioner numbered 420,000 and amounted to more than \$1,070,000,000.

**RAILWAY CAPITAL** is estimated at \$22,800,000,000. There was paid in dividends \$92,000,000 in 1932 and \$95,000,000 in 1933, about 22 per cent of the 5-year pre-depression average, while railroads paid out in taxes \$275,000,000 in 1932 and \$249,000,000 in 1933.

**THE PENNSYLVANIA RAILROAD** has in daily operation over 800 air-conditioned cars.

**UNEMPLOYMENT** in the durable goods industries still amounts to about 5,000,000 persons.

**EXPENDITURES** of Class I railways of the United States for materials and supplies during the first five months of 1934 totaled \$258,000,000, an increase of \$102,400,000 or 66 per cent as compared with the corresponding period of 1933. On July 1 the railroads had 17,813 freight cars on order, 40 steam locomotives and 107 electric locomotives.

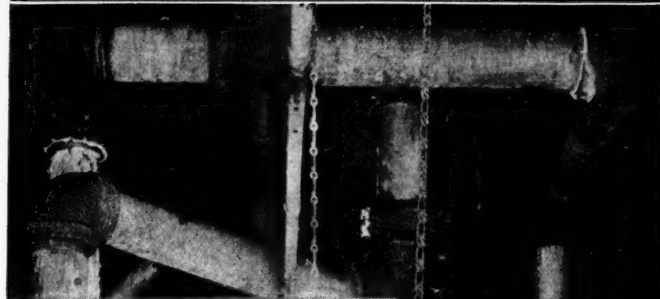
**TAXES** amounted to \$9,000,000,000 last year, or more money than was spent by the people for food, clothes, or any other item. One dollar out of every five earned went for the support of Government.

**COMMERCIAL COTTON CROP** for the year ended July 31 amounted to 13,367,000 bales of lint valued at \$682,207,000, reports the New Orleans Cotton Exchange. The South received about \$152,000,000 more for a 13,368,000 bale commercial cotton crop than it did for the preceding 15,083,000 bales crop, but with the difference that this year's receipts were more or less in depreciated dollars.

**INVESTED IN PUBLIC UTILITIES** are about one-tenth of the \$20,000,000,000 assets of all life insurance companies; over 6 per cent of the \$10,000,000,000 assets of mutual savings banks, and approximately 4 per cent of the assets of all other banks in the country. More than \$2,000,000,000 of securities of utility companies are owned and controlled by banks. This does not include the vast holdings of such securities by trust companies and State banks in the trust funds for which they are responsible.

SEPTEMBER NINETEEN THIRTY-FOUR

## Let the corrosive liquids flow -- it's DUROLINE PIPE



The owners of a large southern textile mill wanted a pipe for klier connections that would resist the corrosive action of certain liquids, and thus give long life without bothersome interruptions to service on account of repairs or replacements. Duroline Pipe was selected. Duroline, a highly protective cement lining, was scientifically developed primarily to resist the destructive action of waters or liquids that rust, corrode, or otherwise attack exposed metal pipe. And the price is only slightly higher than galvanized pipe.

An increasing number of manufacturers who have been troubled with corrosion are turning to Duroline and as a result are cutting down maintenance costs of their pipe lines. Try it out in your plant. Since offered in regular NATIONAL Pipe, you obtain the strength, convenient joints, and other desirable features of the highest quality steel pipe, plus this new defense against corrosion and tuberculation.

Write for bulletin  
on Duroline Pipe.

NATIONAL TUBE  
COMPANY

Subsidiary of United  
States Steel Corporation

PITTSBURGH, PA.



## NATIONAL DUROLINE PIPE

# « « LETTERS FROM READERS » »

## Business Improvement Threatened By Labor Situation

BIRMINGHAM SASH & DOOR CO.  
Birmingham, Ala.

EDITOR MANUFACTURERS RECORD:

Conditions over the entire South are greatly improved. We believe that prospects for business during the rest of this year will be at least 25 to 30% better than they were for the first six months. Stocks in the hands of dealers are low. They will have to be replenished in order to take care of the fall trade, which we believe will be considerably above the average, due to the fact that 12 to 15c per pound cotton always means an improvement in business.

We have found the activities of the NRA beneficial; without them we would not have made the strides towards regaining business improvement as fast as we have.

There are some things, of course, about the activities of the Government that we dislike—especially its handling of the labor situation wherein laborers who have good jobs are allowed to strike without, apparently, a real reason. In the meantime the Government, through the welfare or some other department, feeds them until the strike is settled. This is dragging down the financial surplus in Washington and, over a period of time, is going to cause considerable criticism by all good Southern Democrats. However, I believe that the Administration is smart enough to discontinue this policy within the near future.

J. F. WATSON,  
President.

## Principal Deterrent to Business

ATLANTA, BIRMINGHAM AND COAST  
RAILROAD COMPANY  
Atlanta, Ga.

EDITOR MANUFACTURERS RECORD:

In my opinion the principal deterrent to business at this time is uncertainty concerning governmental policies relating to credit, monetary standards, tariffs, etc. When the policies of Government in such matters are fixed by Congress, and can be changed only by the same authority, business can adjust itself to known conditions, and can fairly approximate possible future changes.

B. L. BUGG,  
President.

## Obstructions to Private Construction

FISKE-CARTER CONSTRUCTION CO.  
Builders  
Greenville, S. C.

EDITOR MANUFACTURERS RECORD:

It is my opinion that the radical changes brought about by the Building Code's minimum wage scale of 40 cents per hour for unskilled labor and maximum of 40 work hours per week, has greatly retarded private construction in the Southeastern States, consequently working a severe hardship on legitimate contractors of this section.

It is also my opinion that the worst blow Southern industry has received in many years has been brought on by section 7 (a) of National Industrial Recovery Act. The record number of strikes that have occurred, and are continuing to occur, since this Act went into effect should be enough to convince the entire country of the fallacy of such a law.

I can see prospects of very little new construction here in the South, other than PWA or Government projects, and am wondering what we contractors will do after such construction is discontinued. Certainly our Government cannot go on forever financing PWA projects and erecting public buildings on any such scale as has been in vogue for the past year.

Another criticism I might offer is in connection with Administrative Order No. X-48 Modifying Executive Order No. 6646, which permits a special discount up to 15%, from regular code prices, to the Federal Government. Certainly if dealers and producers can afford to sell to the Government at 15% less than to the general public the profits of said dealers and producers are exorbitant, which consequently goes to show that price fixing is bad practice.

W. W. CARTER,  
Treasurer.

*The MANUFACTURERS RECORD invites constructive discussions of the problems affecting business and the nation's welfare. It is by the broadest dissemination of such views, based on facts, that some of the confusing questions of the present can be clarified.*

## Uncertainty of Government Moves Hinders Business

BERKELEY WOOLEN COMPANY  
Martinsburg, W. Va.

EDITOR MANUFACTURERS RECORD:

Without attempting to elaborate on our views towards governmental relations to business, we believe the present reaction in our line of industry is due to the attitude at Washington. Both commercial and industrial executives, with whom we come in contact, are permeated with the fear of further regulatory measures. This prevents contracts or commitments being made for future operations and destroys the continuity of production so necessary to meet the ordinary demands of trade.

In our judgment, recovery cannot take place until artificial control of prices, raw materials and finished products; uncertainty of the cost of production and uncertainty as to the value of the money for which the product is to be sold that exists at the time the contract is made, have been eliminated.

The rapid and ever-changing attitude of government towards business, as well as the tremendous extension of government activity in business are the destructive influences in our business life of today.

H. B. McCORMAC,  
Manager.

## Necessary Part of Every Business

G. W. BUTT COMPANY  
General Equipment  
Norfolk, Va.

EDITOR MANUFACTURERS RECORD:

Enclosed is check covering subscription renewal. We have been receiving this valuable "Business Record" for over thirty years and would feel at a loss without it.

We feel the MANUFACTURERS RECORD is the best Business Bureau of information of any publication covering the South, and with its powerful influence it should be considered a necessary part of every business in the South.

We are highly honored to have such fearless statesmen to represent us—Senator Carter Glass and Senator Harry F. Byrd, to whom many of us Virginians look to as our "Moses" to lead us out of the New Deal.

G. W. BUTT,  
Manager.

# DEPENDABILITY IS A PART OF PRECISION TRANSPORTATION

FOR hundreds of thousands of years, man has depended upon Natural Bridge (Nature's masterpiece in stone, spanning a chasm two hundred and fifteen feet deep and ninety feet across) for a safe short-cut when traveling through the Shenandoah Valley of Virginia.

FOR almost a century shippers and receivers of merchandise freight have depended upon Precision Transportation for a safe, speedy short-cut between the Midwest, and the Virginias, the Carolinas and the Atlantic Seaboard and between the North and the South.

## NORFOLK AND WESTERN RAILWAY



PRECISION TRANSPORTATION



# INDUSTRIAL NEWS

## Link-Belt Promotions

J. J. Richards has been appointed manager of the Vibrating Screen Department of Link-Belt Company, Chicago, Ill., succeeding Harry L. Strube, who has been promoted to the position of Assistant Chief Engineer of the company's Philadelphia plants. Joining the Vibrating Screen Department in 1923, Mr. Richards will continue his headquarters in Philadelphia.

## Joins Riley Stoker Corporation

John Hunter, St. Louis, Mo., has joined the staff of the Riley Stoker Corporation, Worcester, Mass., as advisory engineer. He has been connected with marine engineering and power plant construction for a number of years and has been active in the American Society of Mechanical engineers, serving as manager and vice president.

## Armco Return to the Air

In another series of radio broadcasts over the NBC Red Network—26 stations in all—the American Rolling Mill Company, Middletown, Ohio returns to the air September 30. It will feature the celebrated Armco Band directed by Frank Simon and the "Iron-master", in a series of talks about iron and steel. The broadcasts will come on the air at 6.30 P. M. every Sunday, Eastern standard time.

## Manager Advertising and Sales Promotion

A. C. Roy has been appointed manager of the advertising division of the Air Conditioning Department of General Electric Company, succeeding W. A. Bowe, resigned, according to J. J. Donovan, manager of the department. Mr. Roy joined the Edison Lamp Works of General Electric Company in 1916. In his new work, he will continue his office at the General Electric Building, 570 Lexington avenue, New York City.

## Heavy Duty Trailer on Pneumatics

Through efforts of C. R. Jahn Company, Chicago, Ill., distributors of LaCrosse Heavy duty trailers, a new tire has been developed to substantially lower the cost of heavy duty trailers. With a diameter of less than 30 inches, these tires are heavy duty, 10 ply, and have a capacity of 3600 pounds. Pneumatic tired models of LaCrosse Tu-Way Trailers will be equipped with them unless otherwise specified. LaCrosse Tu-Way Trailers may be towed and steered from either end and have eight wheel brakes controlled from either end. They may also load from either end or side.

## Portable Floodlight System

The Homelite Corporation, Port Chester, N. Y., announces a new portable 1250 watt generator and floodlights which speed emergency repairs and enable construction to continue after dark. The advanced and sturdy generator weighs only 89 pounds complete with built-in gasoline engine; is fully automatic. It is proving profitable, it is said, to building contractors, water departments, highway departments, public utility companies and municipalities. In the daytime the Homelite Generator may be used to operate electric saws, drills, hammers, sanders, paint spray guns and other electrically-operated equipment.

## Bucyrus-Erie Appointments

Bucyrus-Erie Company, South Milwaukee, Wis., announces the appointment of Burgman Tractor-Equipment Company, 18 Riverside viaduct, Jacksonville, Fla., as distributor for Bucyrus-Erie excavating equipment in the northern part of Florida. The company also announces the appointment of Crook Company, 2900 Santa Fe avenue, Los Angeles, Cal., as distributor for the sale of power shovels, draglines, cranes, clamshells and skimmer scoops in Southern California.

## Frigidaire Air Conditioning Equipment Sales

By reason of the prolonged heat, the sales volume of Frigidaire air conditioning equipment has materially increased this season over the similar period in 1933, according to E. G. Biechler, president and general manager of Frigidaire Corporation, Dayton, Ohio, subsidiary of General Motors. Large sales have been registered in both divisions of the corporation's air conditioning business, the widespread purchase of self-contained units for installation in homes and offices where comfort is the primary motive for buying, indicating a definite acceptance of air conditioning as an addition to residential and office equipment. Sales gains have also been heavy in the business and industrial field.

(Continued on page 50)

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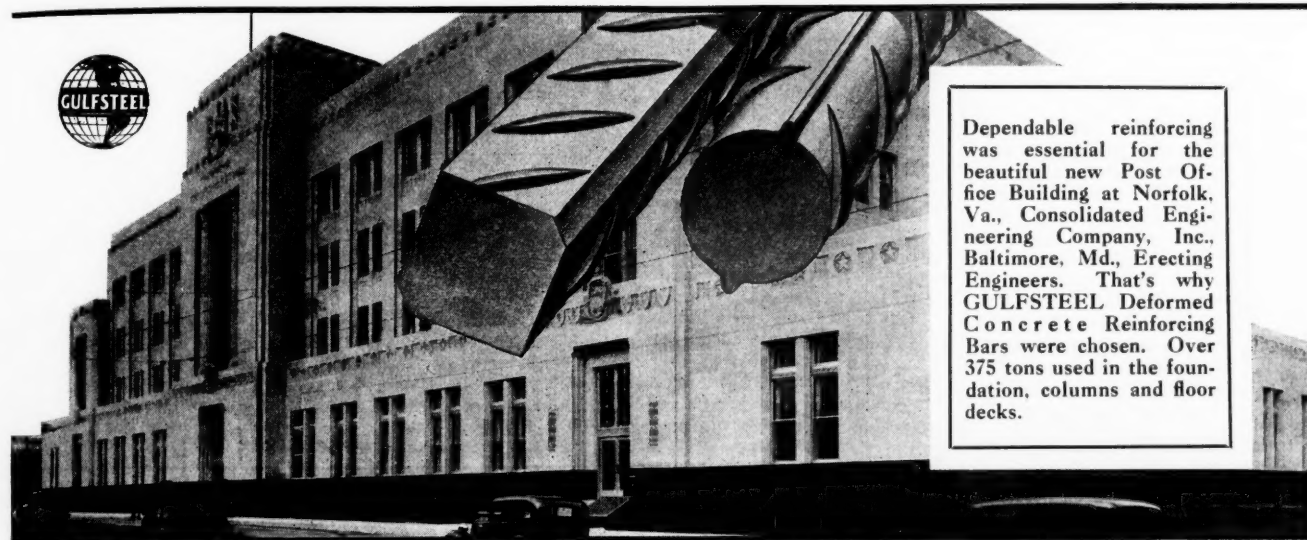
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SUBSIDIARY OF UNITED STATES STEEL CORPORATION

# INDUSTRIAL NEWS

(Continued from page 48)

## Fifth International Foundry Congress

The Fifth International Foundry Congress will be held in Philadelphia, Pa., October 22 to 26, in conjunction with the 38th Annual Convention and Exposition of American Foundrymen's Association.

## Lumber Treating Company Reorganized

Recently reorganized, the American Lumber & Treating Company, Chicago, Ill., is headed by R. M. Morriss, who has been associated for ten years with the Wolman Salts industry in this country. This company has not only done much during the past several years to encourage the use of Wolmanized lumber and to promote its sale through retail yards, but has done much to promote the use of treated wood generally.

## Inexpensive Form of Individual Drive

The Meriam Company, Cleveland, Ohio, recently solved the problem of providing individual drive for a heavy but intermittently-used machine in its gas engine repair plant, with little cost, by mounting a second-hand automobile engine bought for a few dollars on a simple, rigid, but readily adjustable frame built-up of angle bars. The motor is capable of delivering from 15 to 20 horsepower, the carburetor having been reset to use natural gas which is available. This device has been used in connection with a lathe on all kinds of heavy turning work, so successfully that the Meriam company, which has applied for a patent, has had requests from customers to make up similar equipment for use in farm pumping, direct-driven engine-generator sets for home lighting, isolated garage and small manufacturing plant lineshaft drives, etc. The equipment will soon be available in "knock-down" form, so that users may assemble it to particular needs.

**REX Speed Prime Pumps.**—The Chain Belt Company, Milwaukee, Wis., manufacturer of the REX line of contractors' equipment, etc., is distributing an illustrated folder devoted to REX speed Prime Pumps, a fast priming type, of great air handling capacity and ability to handle dirty water and solids.

**Tanks.**—R. D. Cole Manufacturing Company, Newnan, Ga., manufacturers of towers and tanks, stand pipes, engines, boilers, stacks, vats, acid tanks, kiers, etc., has issued a 15-page booklet under the title of "Tank Talk," illustrating a number of many types of tanks which the company produces for domestic, industrial, municipal and other service.

**Loro—Contact Insecticide.**—The Grasselli Chemical Company, Inc., Cleveland, Ohio, has issued a booklet on Loro, a new contact insecticide, for use on flowers, vegetables, shrubs, trees and other ornamentals. This new product is a synthetic contact insecticide, which may be used with safety.

**Trees and Their Uses.**—A. B. Farquhar Co., Limited, York, Pa., manufacturer of sawmills, engines and boilers for more than three-quarters of a century, is distributing a large illustrated poster covering interesting information on trees, wood and their uses. The valuable facts presented in concise form emphasize the great importance of forests and their products in creating national wealth.

**Use Of Explosives.**—The July issue of AG-EX NEWS, publication of the Agricultural Extension Section of the Explosives Department of E. I. du Pont de Nemours & Company, Wilmington, Del., contains several interesting articles on the use of explosives, including one entitled "How Explosives Are Helping to Complete Public Works Jobs"; another on "Special Tools Required to Blast Under Water," and one on "How to Use Dynamite to Shoot Post-Holes in Hard Ground."

**"Jackbits."**—Ingersoll-Rand Company, New York City, has issued an 8-page bulletin—No. 2L12-C—illustrating and describing "Jackbits," "Jackbit" rods and "Jackbit" grinders. Tables of rod types and sizes are given, with dimensional drawings of various shanks.

**V-FLAT DRIVES.**—The Dayton Rubber Manufacturing Company, Dayton, Ohio, has issued Catalog No. 160, the first of its kind, illustrating and describing V-FLAT Drives in a complete range of sizes for all ratings up to 300 H. P. or more, and for use in general industrial service where large speed ratios and very short centers are involved.

**Grinding Wheels.**—The Carborundum Company, Niagara Falls, N. Y., has issued a booklet entitled "A Treatise on the Dressing and Truing of Grinding Wheels," which contains interesting and valuable information of this subject long sought by users of grinding wheels.

**Pig Iron Rough Notes.**—The foregoing is the title of an official publication of Sloss-Sheffield Steel & Iron Company, Birmingham, Ala. It points out that Sloss is now the exclusive agent for Semet-Solvay Foundry Coke in Southern territory, except Jefferson County, Alabama, the coke being produced in the North Birmingham by-product ovens of the Sloss-Sheffield Company.

**Shafer Roller Bearings.**—The Shafer Bearing Company, Chicago, Ill., has issued catalog No. 12 illustrating and describing Shafer Roller Bearings and Self-Aligning Unit. The catalog is much more complete than previous editions.

**Taps, Dies, Screw Plates, Reamers.**—Union Twist Drill Company, Butterfield Division, Derby Line, Vermont, is distributing edition No. 21 of its 198-page catalog, covering taps, dies, screw plates and reamers.

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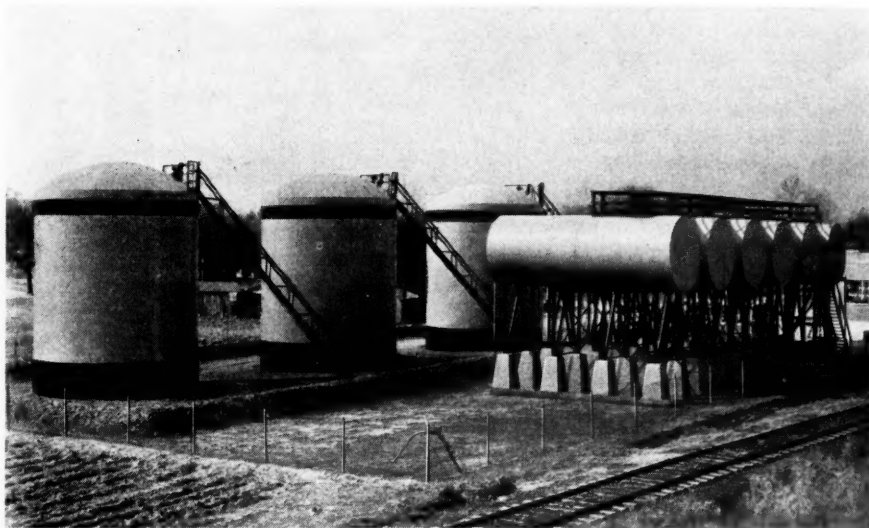
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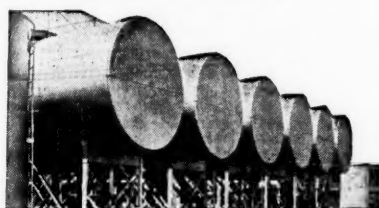
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### **DAVIS CYPRESS TANKS**

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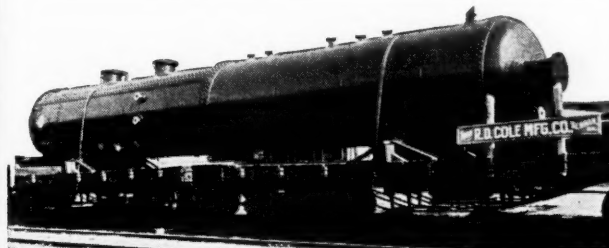
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## Chemical Industry Looking Southward

(Continued from page 20)

Of first importance is the building of three new, large alkali operations on the Gulf Coast. Chronologically the first of these is the plant of the Southern Alkali Corporation at Corpus Christi, which will be producing early this Autumn. This new company is a subsidiary of the Pittsburgh Plate Glass and American Cyanamid, and represents a certainly logical combination. The glass company's own subsidiary, the Columbia Alkali Company, seeking expansion, would hardly increase capacity at their Barberton, Ohio, plant, which, while ideally located for the Pittsburgh, Cleveland, Cincinnati territory, is not too well placed to reach Eastern or Southern markets. Their experienced operating staff furnishes the "know how" and alliance with them gives Cyanamid not only its own source of alkalis for its extensive chemical manufacturing operations but also a controllable supply of alkalis for re-sale, filling out its wide line of chemicals.

Second of the three new alkali operations is the Mathieson plant at Lake Charles, Louisiana, which will begin shipments about the first of the year. With a plant at Saltville, Va., this aggressive company has naturally regarded the South as their especial bailiwick and it is no secret that they have long had the land optioned and the blue prints prepared for the Louisiana plant. The invasion of the South by the new Columbia-Cyanamid alliance brought these plans quickly to a head.

The third plant—Solvay at Baton Rouge—has also been projected for some years, and while building has but just started, it will be pushed to quick completion. This company is one of the four big units of the Allied Chemical and Dye Corporation and the country's largest producer of caustic soda and soda ash.

### Market For Product

But why this lively interest in the South, where today there is admittedly not sufficient alkali consumption to justify even one of these new plants? Each company plans some self-consumption of the new output. Pittsburgh Plate Glass has factories in Oklahoma with plans for expansion, and glassmaking requires great quantities of soda ash. Mathieson will make new products so that their alkali will not all come to the market in the form of ash and caustic. Allied will ship much ash to Hopewell, Va., to be consumed in turning air nitrogen into sodium nitrate for fertilizer.

The chemical industrialists who head these companies all count definitely upon

a substantial increase in the manufacturing activities of the South and, like sulfuric acid, these alkalies are essential in so many manufacturing operations that their new plants would find many customers in any industrial expansion. Cellulose is a natural raw material that has grown greatly in importance with the growth of lacquer and rayon. As cellulose is plant fibre material the South's varied soils and long growing season make it the logical homeland of any cellulose industry. This is equally true, as Dr. Herty's experiments at Savannah in making newsprint from Southern pines have demonstrated, whether cotton linters for high grade material or wood pulp for its cheapness is considered. Dr. Herty's fine work has been accomplished from the chemical point of view. Its translation into the practical use of these Southern resources in paper making waits now on political and economic considerations. If he can produce cellulose from slash and loblolly pines for the fibre and film industries, as I think is extremely likely, he will stimulate development of rayon, cellophane, artificial leather, and lacquer which has already started in the South and which would be easier to expand than it will be to transplant paper mills from the North and Northwest. Nothing should be allowed to hold up Dr. Herty's researches; but the point I would make here is that any cellulose industry is a greedy consumer of alkalies.

However, these new alkali plants are not building to anticipate an increased chemical demand in the South, they are all located at deep water shipment points and will be in a distinctly competitive position in New England by water against Detroit, Painesville, Barberton, and Syracuse by rail. The Southern plant is right on the recently dredged Corpus Christi Bay with a 450 ft. dock on a 30 ft. channel, all with direct access to the Gulf of Mexico. From Lake Charles direct water shipments may be made through the Intercoastal Canal to New Orleans, thence through the Inland Water Ways or out to the open sea either via New Orleans and the Mississippi or to the Gulf through the Orange River. The plant at Baton Rouge will have its own docks on the Mississippi. It is no mere coincidence that all of these locations are on deep water.

### Materials And Process

All three of these new plants will operate the ammonia soda process, the raw materials of which are salt, or rather brine, coke, ammonia, and limestone. Each plant has its own brine supply—Baton Rouge virtually beneath the operation; Lake Charles pumped from Hackberry, 14 miles away; Corpus Christi 61 miles by gravity flow from the Palangana Dome of the Duval Sul-

fur Co., at Benevides.

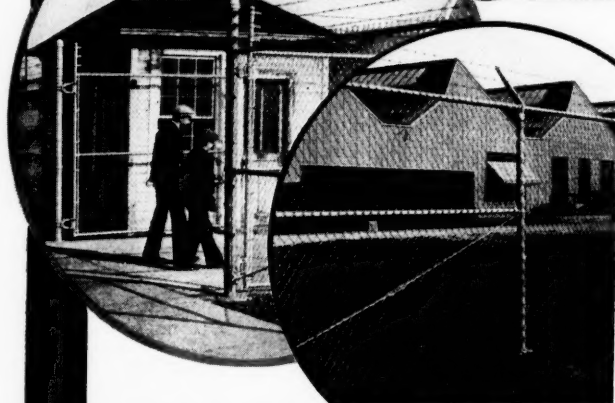
Both the plants now practically built, Southern at Corpus Christi and Mathieson at Lake Charles, are equipped to use either oyster shells or limestone. The former are in abundant supply at both places. The stone will come to Corpus from San Antonio and to Lake Charles by barge down the Mississippi from Missouri and Arkansas, from which supply Baton Rouge will also draw. Birmingham coke and ammonia will supply Mathieson and Solvay, though Mathieson plans later to produce their own ammonia and it would be surprising if Solvay did not also do so. At the Southern plant the Eagle Pass smelters will supply coke and ammonia, though these supplies can also be drawn economically from Alabama. Here power will be made from gas from the company's own fields, which are but six miles away. "Cheap fuel and plenty of brine at tidewater," was the way O. N. Stevens, general manager, summed up the Corpus Christi location.

But raw materials and water shipments are not all there are to the economics of these chemical plant locations in the South. Any chemical making outfit is a labyrinth of pipe-lines—steam, water, gas, and what not carried in solutions—and any plant location in the deep South means about a third saving in the original construction and installation costs of piping alone. Maintenance and replacement costs will furthermore be cut squarely in half and such a blast of sub-zero weather as last winter gave us is one of the very best possible advertisements among chemical executives for Southern factory sites.

### South's Chemical Advantages

This climatic advantage and the wider utilization of our waterways are turning the eyes of our chemical industrialists towards the South just at this time. Their scrutiny naturally focuses on the available raw materials, for abundant, cheap, suitable materials are of prime importance to successful chemical making. The salt, sulfur, oil of the Gulf Coast promise as much as the famous "Cog" supplies (coal, oil, and gas) which are being so successfully worked chemically in the Kanawha Valley. Moreover, the South has long been famous for its rosin and its phosphates. Potash is now available from New Mexico and Texas deposits. The brines of the South and Southwest can—and do, at the new plants in Oklahoma and Texas—supply magnesia as well as sodium, to say nothing of bromine and iodine. With barium, silicon and aluminum, coal, coke, and coal-tar, lime, and not forgetting cellulose, the Southern territory offers every important raw material for chemical manufacturing on a large scale.

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## River and Harbor Developments in South

(Continued from page 23)

### Louisiana

*Louisiana-Texas Intracoastal Waterway from the Mississippi River at or near New Orleans to Corpus Christi, Tex.:*

Funds in the amount of \$807,000 have been allotted by the PWA for work on this project, in addition to funds allocated from regular appropriations. Work on the project has been actively prosecuted during the past few years, and it is expected that the available funds will provide a completed 9-foot waterway as far west as Galveston, during the present summer. Work on the remaining section of the waterway has been retarded to some extent due to the failure of local interests to furnish rights of way as required by Congress in adopting the project.

*Petit Anse, Tigre and Carlin Bayous:*

A PWA allotment of \$38,500 is to be applied to the construction of a connecting channel to the Intracoastal Waterway. Work on the project has not yet been started due to the fact that local interests have not furnished rights of way as required.

*Mormontau River:*

A PWA allotment of \$30,000 is being applied under contract to dredging a 9-foot connecting channel with the Intracoastal Waterway. The work was completed during July, 1934.

### Texas

*Sabine-Neches Waterway:*

PWA funds of \$1,500,000 are being applied to work of deepening these important channels to 32 and 35 feet, with increased widths, work thereon being actively in progress.

*Texas City Channel:*

PWA funds of \$136,300 have been applied to dike extension at this locality, to provide better navigation facilities, the work having been completed during February, 1934.

*Houston Ship Channel:*

Funds in the amount of \$1,500,000, provided by the PWA are being applied to deepening and widening the present channel of this important project. The work is being actively prosecuted at the present time. An additional allotment of \$1,043,000 has recently been made by the PWA to be applied to full completion of the project.

*Freeport Harbor, Tex.:*

A PWA allotment of \$126,500, together with additional funds contributed by local interests, is being applied to the deepening of the existing channel to 30 and 32 feet.

*Port Aransas:*

A PWA allotment of \$272,000 is being applied to deepening the channel to 35 and 37 feet.

*Brazos Island Harbor:*

An allotment of \$2,800,000, made by the PWA is being applied to jetty construction and dredging of a 25-foot channel through Brazos-Santiago Pass. With funds contributed by local interests, a channel has been completed from inside the pass to Point Isabel, and funds have recently been allocated by the PWA for extending the channel to Brownsville, Texas.

### West Virginia

*Kanawha River:*

Funds in the amount of \$6,160,200, provided by the PWA, together with funds allotted from regular appropriations, are being applied to the construction of two new locks and dams near London and Marmet, and to the construction of a lock at Winfield, W. Va., on the Kanawha River, and the construction of locks at Gallipolis, Ohio, on the Ohio River. These locks and dams, when completed, will replace existing inadequate locks and dams on the Kanawha River, as well as three older structures on the Ohio River.

*Tygart Reservoir:*

Funds in the amount of \$10,000,000 have been allotted by the PWA to be applied to the construction of a reservoir in the Tygart River, near Grafton, W. Va. The project will serve to alleviate flood conditions in the Pittsburgh, Pa., area and will also provide additional navigation facilities in the Monongahela River during low-water periods. Preliminary surveys and clearing of land is now being actively prosecuted preliminary to advertisement of the construction of the dam. The total estimated cost of the project is \$12,000,000.

### Kentucky

*Ohio River:*

Allotments totaling \$1,425,000 by the PWA are being applied to open channel work in the Ohio River and to the raising of certain dams, thus affording better navigation facilities.

*Green and Barren Rivers:*

A PWA allotment of \$60,000 is being applied to the removal of old lock and dam No. 5 on the Green River, which is being replaced by a new lock and dam being constructed with funds allotted from regular appropriations.

### Tennessee

*Cumberland River (Tennessee and Kentucky):*

A PWA allotment of \$868,000 is being applied to raising certain existing locks and dams, thus affording increasing facilities in the pool. The work is expected to be completed during the low water season of 1934.

*Wolf River (Memphis Harbor):*

A PWA allotment of \$603,000 is being applied under contract to extension of navigation facilities in Memphis Harbor.

### Rivers & Harbors Congress Considers Projects

At its 29th Annual Convention in Washington, the National Rivers and Harbors Congress, the leading nationwide organization advocating waterway development, adopted procedure for the consideration of individual projects. For many years the policy of the Congress was to advocate only the general policy of river and harbor improvement. It was felt that this policy is now firmly established as a permanent and continuing one of the National Administration, and the former practice of the Congress was changed so that it may now endorse and advocate specific projects which are meritorious, engineeringly feasible and economically sound. To date nearly 100 projects of different

types have been placed before the Rivers and Harbors Congress, including the following in the Southern States which are urged by their sponsors as having a proper place in an adequate development program:

### Arkansas and Missouri

Flood control and improvement of the St. Francis River, covering navigation, flood control, power development, irrigation and drainage.

### Florida

St. Johns-Indian River Canal.  
Tampa Harbor.  
North New River Canal.

### Louisiana

Restoration and repair of existing bank protection work at Twelve Mile Bayou Bend in Caddo Parish.

Caddo Lake Dam.

Extension of the levee system in the Red River and Bayou des Glaizes Levee and Drainage District.

Completion of levee system in the Saline Levee and Drainage District to mouth of Saline Bayou.

Extension and completion of levee system along the unleveed stretches on Red River.

Cut-offs in Red River.

Diversion of Bodeau Bayou in Bossier Parish.

Restoration and repair of existing bank protection work on Red River in Caddo and Bossier Parishes.

Wallace Lake Dam in Caddo Parish.

Twelve Mile Bayou in Caddo Parish.

Black Bayou in Caddo Parish.

Improvement of main artery of drainage via Bayou Pierre route between head of Lake Bayou Pierre and mouth of Bayou Pierre in Red River and Natchitoches Parishes.

Diversion of Bayou des Glaizes, Moreauville State Canal drainage route in Avoyelles Parish.

Improvement of main artery of drainage via Bayou Boeuf Cocorie route between Alexandria and Port Barre.

### Maryland

Savage River Dam.

Chesapeake and Delaware Canal.

### Oklahoma

Lincoln County Flood Control project on Captain Creek.

Hulah Flood Control project.

Salt Plains Lake project in connection with the Salt Fork branch of the Arkansas River.

Western Osage hydro-electric project in connection with the Arkansas River.  
Fairfax-Kaw City hydro-electric project.

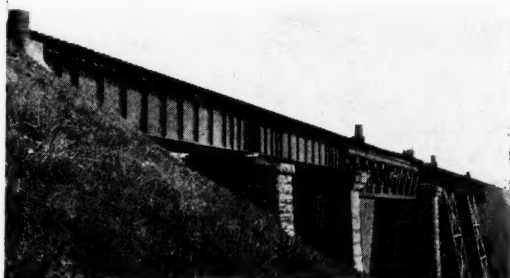
### Texas

Trinity River Canal.

### Senator Bennett C. Clark Heads Projects Committee

These projects have been referred to the Projects Committee, of which U. S. Senator Bennett Champ Clark of Missouri is chairman, for study and report. Senator Clark has long been an active exponent of waterway development, and is recognized as an outstanding authority on the subject. He is a member of the Senate Committee on Commerce,

(Continued on page 56)



## BRIDGES STRUCTURAL STEEL

Photograph shows new bridge on the Louisville & Nashville Railroad, St. Louis Division, constructed recently to take care of modern traffic conditions over this line.

Ingalls structural steel is used throughout the South for bridges and buildings of every nature. For prices on structural steel, and its erection when desired, send us your specifications.

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Decay, rot and fungus attack are eliminated once and for all time when your lumber is pressure-treated by ZMA or Creosote. Eppinger & Russell Co.'s two modern wood-preserving plants are at your constant service for treating all kinds of construction and building lumber.

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**WOLMANIZED LUMBER—**

Decay and Termite Proof—Can Be Painted

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**Atlantic Creosoting Co., Inc.**  
Norfolk, Virginia

Plants at: New Orleans; Winnfield, La.; Louisville, Miss.;  
Savannah, Ga.; Jackson, Tenn., and Norfolk, Va.



## Will today's timber support him when he's grown?

The coming generation must help pay for bridges, docks and other structures built today. The selection of material now determines whether those structures will still be serviceable a generation hence.

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**AMCRECO PRODUCTS**  
have long life and low annual cost

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2. Incipient decay avoided.
3. Framing before treatment.
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6. Treatment accurately timed to proper seasoning.
7. Unequalled facilities and personnel of the leading producer.

AmCreCo creosoted timber is substantial and dependably durable. Its long record of performance gives assurance that its life will amply cover the period necessary for retiring present borrowing.



*will still be good when today's boys  
finish paying for them*

**AMERICAN CREOSOTING COMPANY**

**COLONIAL  
CREOSOTING  
COMPANY**  
INCORPORATED



**GEORGIA  
CREOSOTING  
COMPANY**  
INCORPORATED

LOUISVILLE — KENTUCKY

## River and Harbor Developments in South

(Continued from page 54)

which has jurisdiction over all flood control and waterway legislation.

During the recess of Congress it is expected that Senator Clark and a committee of the National Rivers and Harbors Congress will visit and inspect personally many of these and other waterway projects which are being advocated in connection with the comprehensive development of the nation's water resources as outlined by President Roosevelt.

### Planning Water Development

The attention which is being given by President Roosevelt and his administration to the working out of a plan for the scientific development of the water resources of the nation is very gratifying to the National Rivers and Harbors Congress which has taken the leadership in advocating such a policy on the part of the Federal Government for more than 30 years.

The forthcoming report of the National Resources Board, recently created by President Roosevelt to formulate such a program for consideration at the next session of Congress, is eagerly anticipated by the friends of waterways. They

confidently expect that it will outline a long-range development program which will insure the fullest possible utilization of these God-given natural resources for the public benefit.

There is no other type of public construction that the Government can undertake which will do more to assist in national recovery, and which will mean to such large areas of the country permanent, useful and needed improvement, as the improvement and development of our rivers, harbors and waterways.

### Flood Control Converts Liability to Asset

The uncontrolled flood waters of the United States, which every year take such an enormous toll of human life and property, constitute one of our greatest national liabilities. By proper control and use of the flood waters and the watersheds and streams of the United States, these agencies of destruction may be converted into the nation's most useful servants and its greatest asset.

## Waterways Convention

THE Atlantic Deeper Waterways Association is to hold its twenty-seventh annual convention at Hotel John Marshall, Richmond, Va., October 16-20. The Association is meeting in Richmond at the invitation of legislative

authorities headed by Mayor J. Fulmer Bright of that city. Business firms, associations and corporations are entitled to representation at the convention. Delegates may also be appointed by Governors of the Atlantic Coastal States, and by Mayors of municipalities. J. Hampton Moore is president of the Association with headquarters at 1405 Widener Building, Philadelphia, Pa.

## Louis Frederick Nagle

AFTER an illness of a week, Louis Frederick Nagle, general sales manager of the Central Iron and Steel Company, Harrisburg, Pa., died in that city on August 2. Born in Pottstown, Pa., in 1868, he began his business career with the Glasgow Iron Company, Glasgow, Pa., with which organization he was associated about 10 years, and then joined the Worth Brothers Company organization at Coatesville, Pa., serving as general sales manager and purchasing agent for 19 years. Upon the absorption of this company by the former Midvale Steel and Ordnance Company, he removed to Pottstown and established the Nagle Steel Company which operated for 10 years. In 1924 he associated with Central Iron and Steel Company and was soon made general sales manager of that company.

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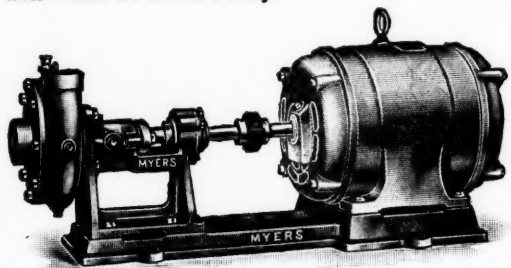
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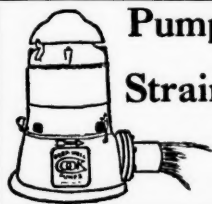
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Gentlemen: Please send me full information on Cabot's Creosote Shingle and Wood Stains.

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## Sales Tax Accomplishments in North Carolina

(Continued from page 24)

would bring about total collapse of their business and spread financial ruin throughout the State. They attempted to maintain that they would be unable to pass the tax on and would be compelled to absorb it. It required a longer session than ever in the history of the State to enact the sales tax.

The predictions of the merchants have failed to materialize. Business of the North Carolina merchants since the effective date of the sales tax act on July 1st, 1933 has been phenomenally good. It has exceeded the gains over the previous year of sister States, which do not have a sales tax.

From January 1st to June, 1934, North Carolina business showed an increase over the six months from January to June 1933 of 27.6%, while from July 1st, 1933, to January, 1934, the increase showed an even higher percentage of gain. Ask any North Carolina merchant and they will tell you that business has been good. There has not been a single failure of any mercantile establishment that has been or could be charged to the sales tax. The merchants'

opposition has almost entirely subsided.

### Public Support

On the part of the public the tax has been cheerfully accepted. The enactment of the property tax reduction brought to its support the entire property taxpaying citizens of North Carolina. The individual who owned no property but was having the advantages of schools and other facilities of government recognized the fairness of his small contribution to the cost of the service which he received. He realized also that without the sales tax it would have been impossible for him to have had a school for his children.

The rate of tax in North Carolina is 3% on retail and 1/25 of 1% on wholesale business. The act provides exemption of nine essential articles of food. It also exempts gasoline, school books, fertilizer and articles sold by producers direct to customers.

The exemptions in the act caused some difficulty on the part of the merchants in accounting for liability under the act and makes for difficulty of administration. The sentiment throughout the State is apparently for a reenactment of the tax at the next session of the legislature in 1935 and the elimination of all exemptions except governmental sales.

### \$7,000,000 Revenue

The revenue representing collections for eleven months make it apparent that for the first twelve months the revenue from the tax will exceed \$7,000,000.

The administration of the law has cost somewhat less than 2% of the amount collected.

With 23 American States now in the sales tax field, a wide experience in the administration of the law has been gained within the last year. All of these States, with the exception of Mississippi, have come into the sales tax field since January 1933.

According to authorities on taxation any new tax is a bad tax. Any tax to which business becomes adjusted which can be reasonably administered and is effective in operation is a good tax. North Carolina has adjusted herself to the sales tax which was enacted by the sheer necessities of the case.

### No Delinquents

The sales tax has no delinquents. The public who pays this tax pays in cash on expenditures and not on income or savings and in such a way it is scarcely felt. The amount paid is almost negligible in the affairs of any person.

The North Carolina sales tax has been a success from any point of view from which you wish to look at it.

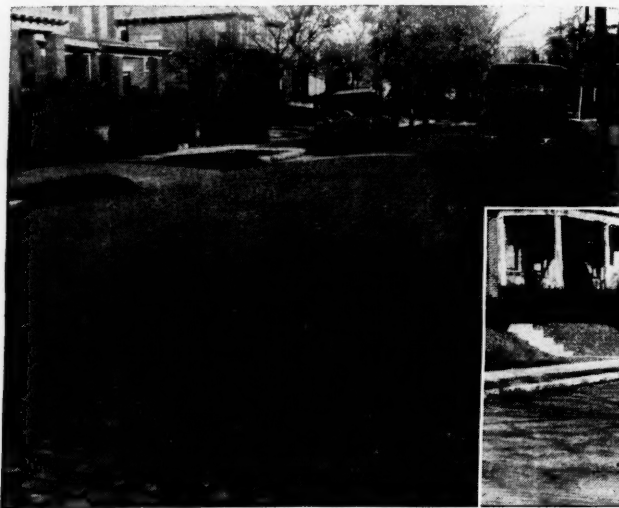
## "FINE SERVICE FOR OVER THIRTY YEARS"

Actual figures on maintenance of various pavement types show the economy of brick construction.

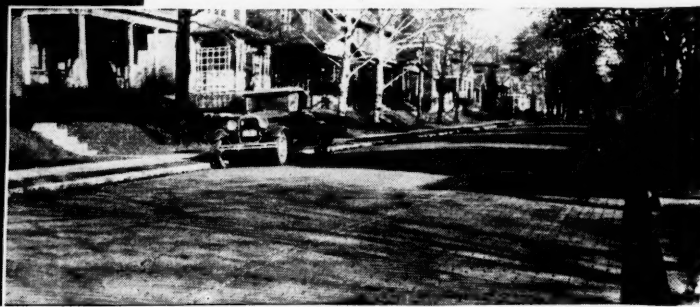
The reason for this habitually low maintenance cost is that brick protects the base from traffic as well as weather destruction. Non-absorbent and sealed water-tight with filler, the brick-surfaced base can perform its load-bearing function without impairment.

Brick pavements are now built so as to be free of all excess filler when opened to the traffic. This gives a safe, smooth-riding road that is handsome in appearance. It is, of course, the cheapest pavement per-year-of-service that can be built.

For data on brick construction, write National Paving Brick Association, 1245 National Press Building, Washington, D. C.



BELOW: 40-year old brick pavement on 8th Avenue, Columbus, O., which has averaged only one-third cent per square yard maintenance costs per year. LEFT: Clifton Avenue in Columbus with 25 years of service to date at a total maintenance cost of \$34.29—and the pavement is now in ideal condition.



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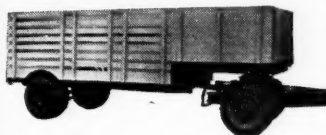
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# COAL INDUSTRY'S OUTLOOK

By  
**J. V. Sullivan**  
Secretary, West Virginia Coal Association,  
Charleston, W. Va.

**C**OAL production is about 60 per cent of normal, measured by pre-depression years. In the past year the industry has operated under a code that enabled it to control destructive competition, resulting in price stabilization without apprehension of governmental arraignment, and increased wages for employees with consequential expansion of purchasing power. These objectives have been attained in the recovery program without impairment of public favor, as price adjustments are conservatively restrained by availability of competitive fuels.

The coal code, by Government fiat, has accomplished the main objective of the regional coal sales agency plan, by which bituminous coal had formulated and evolved a plan of self-regulation to cure competitive dementia. When the

Supreme Court of the United States approved the Appalachian plan of sales agency, the Government accepted the formula, combined with it as a labor sedative, Section 7A of the National Recovery Act providing for collective bargaining and dismissed the patient. While the industry was stimulated by the temporary treatment, the governmental doctor ignored the cause of the economic distress. Complete diagnosis of the ills of the coal industry made it apparent that coal has suffered in the last decade from the inroads made by competitive fuels, including fuel oil, natural gas and water power.

It is this problem that obscures the future of the coal industry. Professional minds have sought with some measure of success to impress the Washington bureaus and departments, and even the White House, that coal is a decadent industry. The administration has given major impetus to the development of water power. It has allocated public funds by the millions to water power projects. In the Tennessee Valley, in the Monongahela Valley, in the Middle West, in the Far West, and in the St. Lawrence waterways treaty, power develop-

ment was the compelling issue. Water power in the Rockies has but scant effect on the coal industry. In the Appalachian States, however, this development deprives the coal industry of its markets, creates unemployment problems and eventually would destroy a great industry.

In a recent bulletin the National Coal Association shows that in the generation of hydro-electric power each kilowatt year represents 6 tons of coal, and that for every million tons of coal displaced there is an accompanying loss of railroad freight revenue of over \$2,000,000, with the loss of employment to railroad workers, in addition to capital and labor losses in other industries indirectly dependent on the mining and merchandising of coal.

These contemplated billions to be expended for the development of hydro-electric energy by a benign government might be a potential guarantee for full recovery of the coal mining industry if they were allocated even in part to the construction of steam plants for the generation of electric power. Engineers are convinced that it would be more economical, capital investments would not be destroyed, and labor would not have to endure the unemployment that would follow the closing of coal mines.

## PREPARE FOR POWER INTERRUPTION

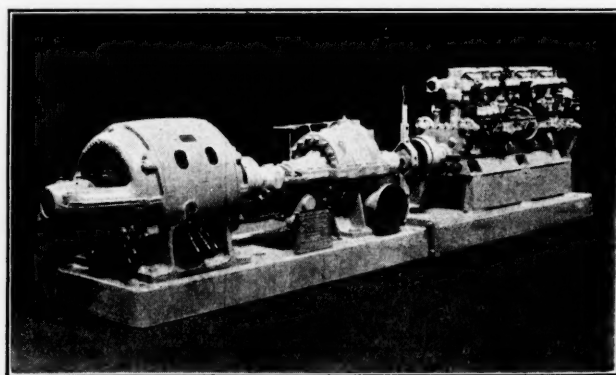
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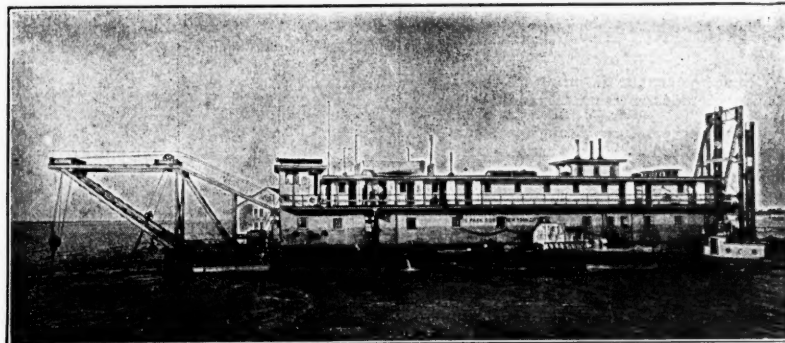
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## Southeast Texas Forest Survey

**T**HE Southern Forest Survey, a part of the U. S. Forest Service, established to make a nationwide survey of timber resources, is placing six crews of timber estimators at work in the forest region of Southeast Texas. This region lies almost entirely between the courses of the Sabine and the Neches River. These two rivers have a common exit through Sabine Pass, to the Gulf of Mexico. To those not familiar with the shipping of the United States the information that the Sabine-Neches is second only in tonnage to the New York district may come somewhat as a surprise.

The East Texas area, of which an inventory is to be made, comprises approximately 8,500,000 acres. It is estimated that from 15 to 20 per cent of the land is non-purchasable on account of substantial agricultural values. The purchase of the remainder will complete the plan of the National Forest purchase under the present program.

It is interesting to note that during



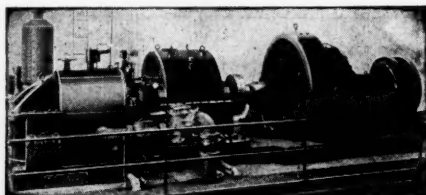
Virgin Longleaf Pine Stand  
Lutcher Moore Lumber Co., Texas

the past five years the cooperation of private owners of forest lands with the Texas Forest Service has resulted in a large measure of fire protection being given to a total of 8,010,000 acres of East Texas forest. This protective service, handicapped as it is by shortage of equipment and men, has resulted in immense savings. Steel fire detection towers, from 90 to 120 feet in height,

fire detection tree cabs, nearly 1000 miles of telephone lines, and approximately the same number of miles of fire lanes have proven their value.

Enormous supplies of pulp wood adjacent to a district which is rapidly becoming an important producer of essential chemicals and the whole served not only by great railway systems but by a great inland waterway system and world ports present an opportunity to those interested in paper production.

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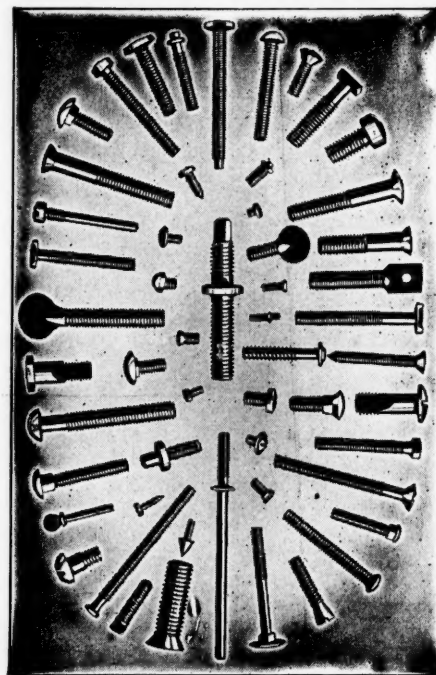
The improved efficiency of modern turbines also results in large savings in straight condensing plants.

The cost of producing high pressure steam with modern boiler and furnace equipment is little, if any, more, in fact generally less, than the cost of low pressure steam with old style obsolete equipment. The new style boilers are more efficient and modern furnaces burn cheaper coal with less waste of heat. The present high rating boilers and furnaces occupy much less space than do those of older design.

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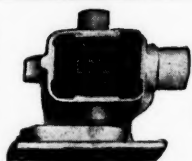
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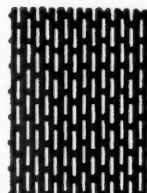
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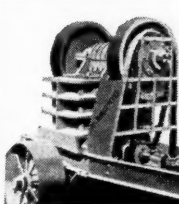
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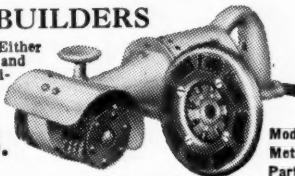
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## \$6,310,530,000 Value South's Wholesale Business

The South's 39,930 wholesale establishments did a net volume of business of \$6,310,530,000 in 1933, according to preliminary figures issued by the Census Bureau. They paid in salaries and wages \$338,654,000 and gave full or part-time employment to 297,732 persons.

Compared with 1929, the dollar value of the South's wholesale business in 1933 showed a decrease of 58 per cent, approximately the same as the decline in wholesale trade for the rest of the country. Marked improvement was shown during the last few months of 1933, but the year as a whole did not compare favorably with 1929.

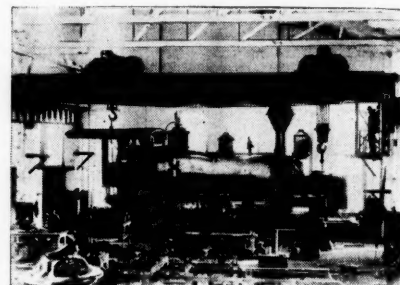
While the two censuses are not alike, largely due to difficulties in the canvass, coverage and classification, they offer an interesting comparison in total amount of wholesale business done in a depression period. Every city, county and State has been covered and the data is being released as fast as it can be tabulated.

### Carborundum Returns To Air

Beginning October 20, the famous Carborundum programs will return to the air for the season of 1934-35, between 10 and 10.30 o'clock each Saturday night. The program will be featured by the Carborundum band of 50 pieces, and the telling of Indian legends and instructive industrial stories on the manufacture and use of products of The Carborundum Company, Buffalo, N. Y.

## Grand Daddy of Electric Cranes

The Harnischfeger Corporation is celebrating its 50th birthday this year. In going over the records of early equipment, the company discovered that a P. & H. tri-motored crane was still in service in the Union Pacific Shops at Cheyenne after its purchase 44 years ago. This was the first tri-motored electric crane ever completely designed and



### Served Long and Well

built by the Harnischfeger Corporation, in whose shops this particular type of equipment was developed. It is still doing active duty today. The only changes are control mechanism and hoist which have been modernized.

**Problem of Liquor Control.**—The H. W. Wilson Company, of New York City, publishers of indexes and reference works, have issued a new volume in their Handbook Series—The Problem of Liquor Control. The price of the book is \$2.40.

### CENSUS WHOLESALE BUSINESS IN THE SOUTH

States	1933			1929		
	Number of Establishments	Net Sales	Salaries Wages	Number of Establishments	Net Sales	Salaries Wages
Alabama	1,548	\$187,886,000	\$11,665,000	1,743	\$574,145,000	\$23,650,000
Arkansas	1,119	115,754,000	7,290,000	2,052	373,074,000	12,195,000
Florida	1,985	256,006,000	17,936,000	2,054	466,535,000	26,751,000
Georgia	2,205	386,538,000	20,165,000	3,183	1,016,496,000	36,896,000
Kentucky	1,973	259,871,000	15,323,000	2,027	522,495,000	26,083,000
Louisiana	2,026	420,713,000	22,920,000	1,729	836,197,000	29,337,000
Maryland	2,203	367,697,000	22,858,000	2,205	741,367,000	33,045,000
Mississippi	1,246	142,831,000	6,307,000	1,713	385,226,000	10,528,000
Missouri	5,908	1,362,897,000	70,760,000	6,674	3,361,721,000	145,571,000
N. Carolina	2,271	372,912,000	16,411,000	2,413	717,432,000	25,823,000
Oklahoma	3,934	294,831,000	17,110,000	4,179	773,398,000	30,916,000
S. Carolina	1,216	164,283,000	6,205,000	1,539	333,528,000	10,535,000
Tennessee	1,929	428,374,000	19,750,000	2,256	1,068,981,000	35,124,000
Texas	6,876	1,048,131,000	52,327,000	9,606	2,804,518,000	96,841,000
Virginia	2,333	331,537,000	20,611,000	2,344	656,309,000	30,272,000
W. Virginia	1,158	170,269,000	11,016,000	1,132	346,839,000	19,303,000
Total South	39,930	\$6,310,530,000	\$338,654,000	46,849	\$14,978,261,000	\$592,333,000
United States	159,724	\$30,482,271,000	\$1,645,539,000	169,655	\$69,056,604,000	\$3,010,130,000

1905

1933

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The aluminum manufacturers throughout the country now are investigating the proposition of the erection of an aluminum plant at Tupelo, to develop this great bauxite field.

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## Creosoted Piling for Bonnet Carré Spillway

The Southern pine industry has been directly affected in a beneficial way as the result of the construction of the Bonnet Carré Spillway, La. This work has necessitated the use of a large amount of creosoted piling and timber of Southern pine.

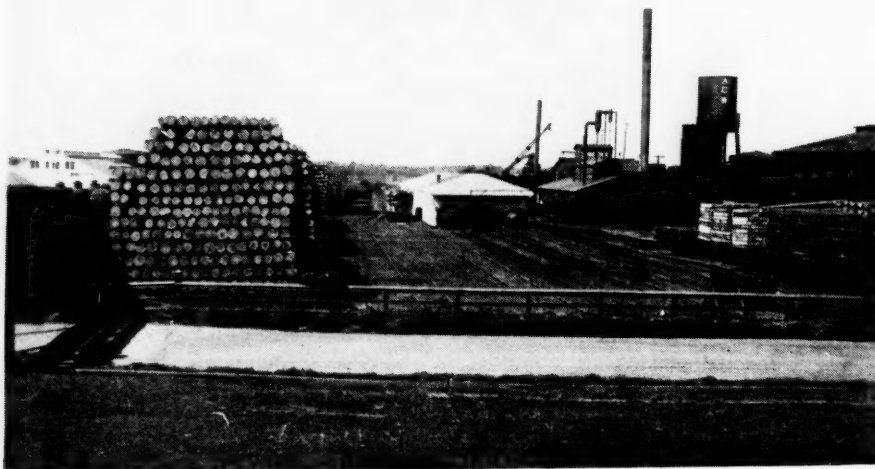
The accompanying illustration shows a part of the piling on hand at the plant of the American Creosote Works, New

Orleans, for treatment for use in the bridges of the Illinois Central, Yazoo & Mississippi Valley, and Louisiana & Arkansas railroads spanning the Bonnet Carré Spillway. The piling is brought into the yard for seasoning before treatment.

Charles M. Kerr, sales manager of the American Creosote Works, states that the contract for the treatment of the

**Southport (La.) Plant of American Creosote Works, Inc., New Orleans.**

On left is part of seven stacks of piling awaiting wood preservation treatment for trestles across Bonnet Carré Spillway.



bridge, or trestle, material is one of the largest placed in the history of the creosoting industry.

The contract with the Illinois Central Railroad, which also includes the Yazoo & Mississippi Valley Line, a leased subsidiary, covers the treatment of 418,100 lineal feet of piling, while that of the Louisiana and Arkansas Railroad is for 256,947 lineal feet of piling. The Illinois Central is acquiring its own piling from producers.

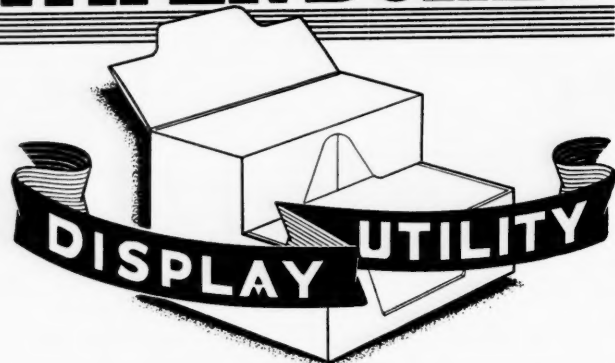
In addition to the piling, the American Creosote Works is treating 2,563,702 feet board measure of timbers for the three spans.

The piling is being treated with grade No. 1 creosote oil, A. R. E. A. specification, the Illinois Central contract calling for 18 pounds pressure per cubic foot, and the L. & A. contract for 16 pounds pressure. The timbers are to be framed before treatment, and will be given 16 pounds pressure. The L. & A. piling run from 70 to 75 feet in length; the other railroads' from 70 to 90 feet. The piling is seasoned from 60 to 90 days before treatment.

### Tennessee's Brown Iron Ores

A report prepared by Ernest F. Burchard, of the United States Geological Survey, in cooperation with the Division of Geology of the Tennessee Department of Education, describes the brown iron ores of the western highland rim of Tennessee.

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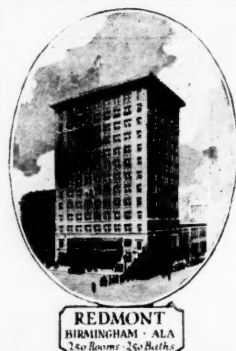


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75	General	KT	1200
60	Howell	SC	900
25	Allis Chalmers	AN	1150

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100	General	form M	600
50	Wagner	BR	850
40	Westinghouse	HF	1140

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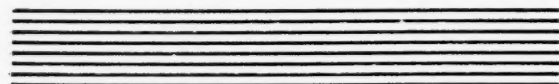
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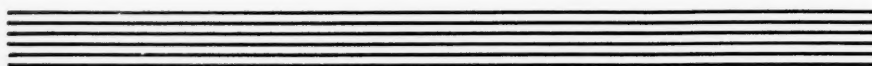
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## Good News

As showing a bright spot for August in one branch of the capital goods industry, the following report has been received from the Combustion Engineering Company, Inc., New York City.

Despite a mid-summer slump in certain lines which has held down the general business index, August has developed encouraging signs in the purchase of power plant equipment. A wide diversity of industries is involved as shown by a substantial volume of August orders received by the company. These include the largest 1400-pound pressure steam generating unit ever built, which will go into the Rouge plant of the Ford Motor Company; two large boiler units for the Detroit Edison Company; two complete steam generating units for the U. S. Industrial Alcohol Company; 64 welded drums for Naval boilers; two 50-ton chemical and waste-heat recovery units for a Virginia pulp mill; two steam generators for a public utility in Nanking, China; five water-cooled furnaces for Du Pont; four boilers for a Texas sulphur company; and other units for a hospital, a flour mill and a PWA project. In addition, a considerable volume of stoker and small boiler sales indicates that industry is now giving attention to its steam generation facilities. Much of this equipment will be built in the South at the Chattanooga works of the Combustion Engineering Company.

## Kyanite Found in Georgia

Large deposits of Kyanite have been found in Habersham and Rabun counties, Ga., according to L. M. Pringle, U. S. geologist in charge of a survey made jointly by Federal and State agencies.

What previously had been known as scattered occurrences of kyanite-mica schists in Habersham county, turn out to be part of a large U-shaped belt starting near Clarksville and extending more than ten miles northeastward into Rabun county. The belt varies from 100 to about 1,000 feet in width and according to the prospecting geologists, is uniform in character throughout its length. The arms of the belt are two to three miles apart.

The kyanite investigations are to be extended into other counties of North Georgia, and may reveal other occurrences possibly in North Carolina.

## LATHE FOR SALE

Used 24" x 16" Heavy Duty Greaves & Klusman 3 step cone back geared lathe with taper attachment, gears to cut 2/3 threads per inch, 26" lathe chuck and countershaft, in actual use very few months and in good condition.

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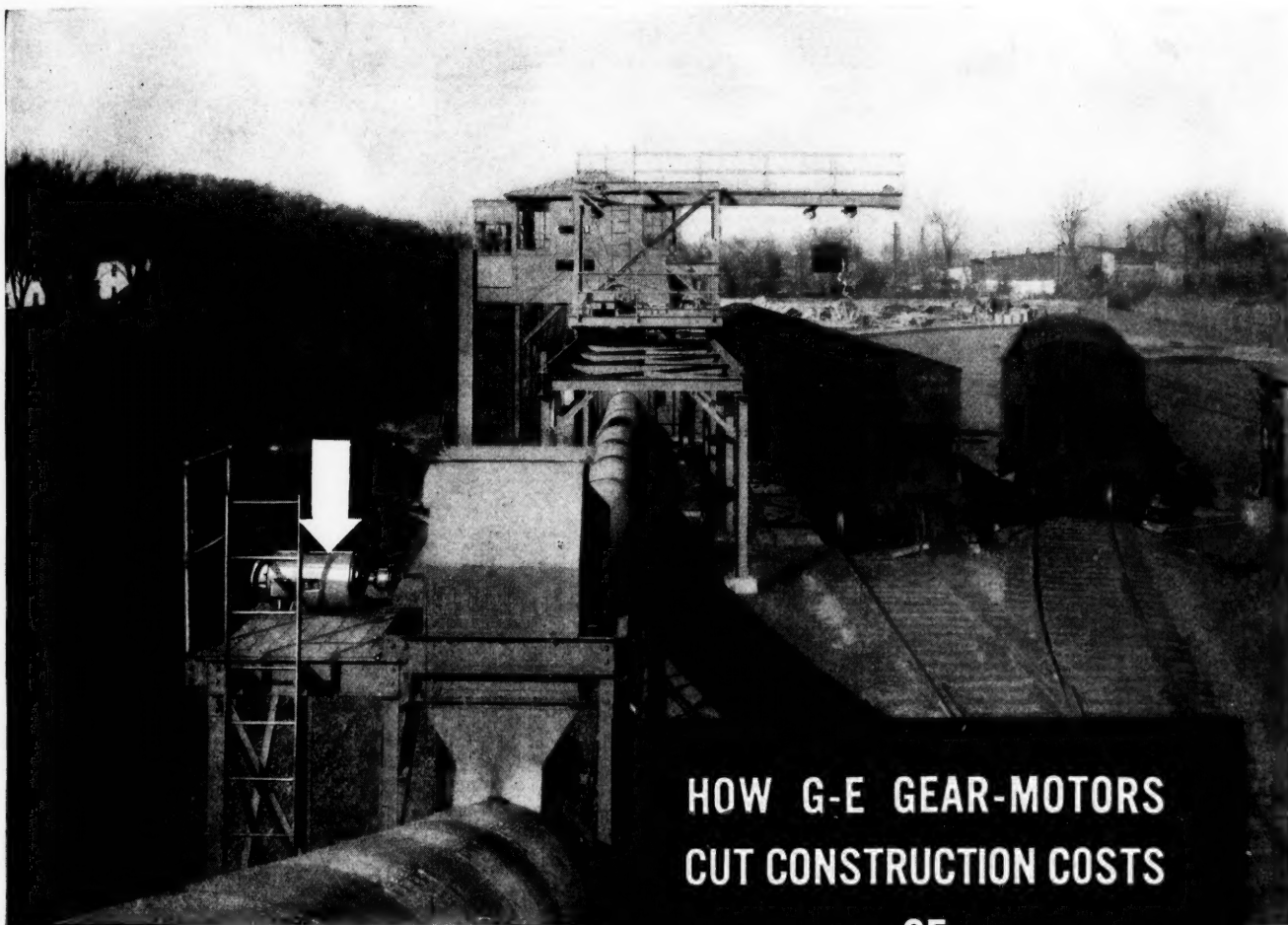
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Specifications for this job, which was engineered by Stone and Webster, required that the drives be suitable for service under all outdoor conditions and that they comply with the safety laws of the District of Columbia. G-E gear-motors, in splash-proof housings, met these requirements.

You will find that its compactness, efficiency, ease of mounting, and simplicity make the G-E gear-motor the preferred drive wherever low speed is desired. For additional information, address General Electric, Department 6G-201, Schenectady, N. Y.

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